Brazing Copper Tubing . . . . . Pg. 20

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Heat Holds On, Cooling Sales Climb Higher

Unitary Mfrs. See 25% Gain Possible

DETROIT—As record-breaking heat continued into a third week in many heavy populated areas throughout the U. S., evidence continued to mount that air conditioning sales for the calendar year 1961 will wind up much better than had been predicted earlier this year.

Predictions and "hopes" for an increase in sales of unitary air conditioners other than room units had looked to an increase of around 15%, with a possible top of 20%. At a recent meeting attended by representatives of a number of leading manufacturers of unitary equipment, there was opinion expressed that the gain might be more in the area of 25%, perhaps pushing beyond this figure.

The heat wave was helping to cut room cooler inventories. In New York City, always a major market for such units, an official of L & P Electric, which lays claim to being the largest distributor of such units anywhere, said he did not believe that there would hardly be "any floor plan" room cooler merchandise left in the New York metropolitan area at the

(Continued on Back Page, Col. 1)

✓ INSIDE THIS ISSUE

NEW CENTRIFUGAL FAN solves space and noise problems in Coal Bldg. 11

GOOD SERVICE simpler than poor service, clinic shows....15

BRAZING COPPER TUBING—CABRA research director offers helpful hints in illustrated article 20

CONDENSER HEAT helps to warm building — Saves $500 yearly for market.....26

ACCURATE LOAD CALCULATION critical in heat pump application 27

AIR COMPRESSOR MFR. can't easily switch over to refrigeration field because of cleanliness and tolerance requirements...28

WHAT BUILDING OWNERS, MANAGERS says about air conditioning 30

LIBRARY heated, cooled by 10 fan-coil units with individual controls 34

EDITORIAL 18

Trane Still Operates As Strike Goes On

LA CROSSE, Wis.—A strike at The Trane Co. here by Lodge 21 of the International Assn. of Machinists (AFL-CIO) over terms of a new contract continued last week but some production operations were still going on.

The union is composed of some 1,800 manufacturing employes. They went on strike Aug. 21.

(Continued on Page 4, Col. 1)

Ford Plans To Buy Philco, Join Other Auto Makers In Air Conditioner Field

By Phil B. Redeker

DETROIT, Sept. 14 — Ford Motor Co. has announced plans for the purchase of the assets of Philco Corp., which if they receive the approval of Philco stockholders and tax authorities, could make Philco a wholly owned operating subsidiary of the Ford Motor Co. by Nov. 30 of this year.

If the plans go through, Ford will join the ranks of other automobile makers who produce appliances and air conditioners. General Motors Corp. through its Frigidaire Div., and American Motor Corp. through its Kelvinator Div., produce and merchandise major appliances. Chrysler Corp.'s Airtemp Div. makes air conditioning equipment. However, none of these firms produce TV sets and electronic devices, which Philco does.

Henry Ford II, Ford chairman, said Ford's "purpose in purchasing Philco Corp. is to broaden its operations, to provide entry into new fields, and to make possible a fuller participation by our company in the national defense and space effort."

Observers in Detroit believe that this statement by the board chairman holds the key to Ford's interest in making the acquisition. Ford has a West Coast division, the Aeroneutronics Div., in the electronics and missile guidance field, but up to the present it has not been a major factor.

Philco has been making conscious efforts to increase its volume in electronics and products related to the Defense effort. It has been a major producer of transistors, and has been participating in a number of military missile and space programs, particularly as a prime contractor on the Sidewinder missile program, and through participation in the Courier, Discover, and Midas satellite programs. Philco's efforts to diversify have also taken it heavily into development of computers.

On the other hand, Philco has been placing less emphasis on its room air conditioner and appliance operations. Rumors had circulated in the last year or two that Philco was seeking

(Continued on Page 4, Col. 3)

G-E Adds Remote Quik-Attach Unit For Home Cooling

TYLER, Texas — Low-cost summer cooling for the small-home owner is now easier than ever, thanks to its new "Quik-Attach" air conditioner, according to General Electric Co.

The new unit (model TA22G, in the 2-ton range) was designed by G-E to combine the flexibility of the split-system air conditioner with the factory-sealed advantages and installation ease of integral units.

"With the Quik-Attach system," the company said, "the condensing unit can be installed outdoors in any convenient location.

"The cooling coil, after being mounted in place, is connected to the outdoor unit with precharged tubing, using G-E developed Quik-Attach fittings. The connecting tubing is available in several convenient lengths for ease of installation.

"The Quik-Attach system means not only faster, less expensive installations, but also does away with the many brazed joints used to connect 'conventional' split-system air conditioning equipment. And, the less joints, the less possibility of hard-to-find, costly refrigerant leaks."

The new unit also features the

(Continued on Page 35, Col. 2)

Bodine Named RSES Educational Director

CHICAGO—Dale Bodine, recently of Copeland Refrigeration Corp., Sidney, Ohio, has been named educational director of the Refrigeration Service Engineers Society to succeed the late John Spence.

Dale H. Bodine

Bodine has a background of 32 years' refrigeration experience dating back to 1929 when he was engaged in apartment house refrigeration work for Kelvinator in Detroit.

In 1936 he became national service representative for Universal Cooler Corp. and in 1940 until 1952 served as service manager of Copeland, later being appointed as manager of educational services for the

(Continued on Page 4, Col. 5)

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Those Keys In Your Life

When Senate GOP leader Everett Dirksen surprised President Kennedy by presenting him with a key marked "White House—Back Door," it was only the latest episode in a 5,000-year-old key story full of odd twists.

Keys are at least that old. They have been found in the most ancient Egyptian tombs, and in Mayan excavations. Some of the most famous passages in the Bible mention them.

Keys have been used to hunt witches, cure nosebleeds and headaches, even divorce an unwanted mate!

Superstitious folk have had many a field day with keys. In olden France it was believed that a werewolf would return to human form if struck between the eyes with a key.

An only son in rural China is given a key to "lock himself into life."

In the days when people believed that witches existed, a sure-fire means of identifying evil spirits involved the use of a Bible and a key.

Said key was placed in a Bible with the handle outside. Grasping the handle, someone would recite: "Turn Bible, turn key, turn and show the name to me."

Then the names of suspects were read out—and, so the legend goes, that key turned all by itself at the mention of the suspected witch's name.

In Norway, a big iron key is hung over the stalls of diseased cattle to cure them. Mothers in Mediterranean countries still place keys on the babies to ward off convulsions.

Want a "sure" headache cure?

(Continued on Page 14, Col. 1)

Airtemp Prepares for '62 Line Showings

DAYTON — Plans for introducing Chrysler Airtemp's 1962 lines of air conditioning and heating products have been announced by T. W. Kirby, vice president-marketing.

The company's new line of residential and commercial products will be introduced next month to Chrysler's packaged distributors in Miami Beach, Fla. A national sales conference is set for Oct. 15-18 at the

(Continued on Page 4, Col. 5)

Gibson Sets Sights on Top Spot In Room Coolers, Dealers Told

By Frank J. Versagi
from
Panama City, Republic of Panama

"Let there be no doubt about it; we intend to become the number one line of room air conditioners in the country. Going for us is an increasing acceptance of air conditioning and our own improved line of products which range from units for small bedrooms to units capable of taking care of a six-room house."

C. J. Gibson, Jr., president of Gibson Refrigerator Div., Hupp Corp., flatly predicted this emerging importance of Gibson in the air conditioning field during the company's 85th anniversary celebration, which coincided with a mammoth dealer convention during which over 5,000 people, in flights of some 140 each, will be jetted to Panama, with a stopover in Jamaica. The NEWS covered the inaugural flight and convention.

Of business in general Gibson's sales vice president, W. C. Conley, said, "Business is up; Gibson has the greatest backlog in its history; preconvention orders have already resulted in the need for overtime at the plant." Soaring freezer sales, especially, are the pacemaker in the appliance comeback, Conley stated.

In a clever mixture of business and pleasure, Gibson is exposing its distributors and dealers to product information, sales help, and service training during the five-day jaunt to Jamaica

(Continued on Page 35, Col. 1)

Sinko Kogyo Licensed by Buensod-Stacey

NEW YORK CITY — Sinko Kogyo Co., Ltd., of Osaka, Japan, has been appointed a licensee of Buensod-Stacey Corp. here.

Sinko will manufacture and distribute Buensod-Stacey "Dual Duct" high velocity air mixing units and allied equipment in Japan.

The announcement was made by J. W. Kreuttner, vice president, Manufactured Products Div. of Buensod-Stacey, who recently returned from an around-the-world trip which included a two-week stay in Japan for a series of meetings with the new licensee.

Sinko Kogyo is said to be one of the leading manufacturers in Japan of heating, air conditioning, and ventilating equipment.

Sinko will manufacture and distribute the Buensod-Stacey Dual Duct equipment, while system design, engineering, and contracting work will be done by engineering-contracting organizations there. Sinko already has orders for five installations.

"Building activity in Japan is now at an all-time high," Kreuttner said, "and all buildings of any significance are being air conditioned."

Shortly after his return to New York, representatives of Sinko and two Japanese engineering - contracting organizations came to New York, where they spent four weeks studying the Buensod-Stacey manufacturing and installation methods. The engineering-contracting organizations represented were Sanki Kogyo Co., Ltd., and Takasago Thermology, Ltd.

Stevens To Make Bohn Equipment In Australia

DANVILLE, Ill. — W. C. Stevens Pty. Ltd. of Camperdown, Australia, has been granted an exclusive license by the Bohn Aluminum & Brass Corp. to manufacture Bohn heating, cooling, and refrigeration equipment of the type produced in the U.S.A. at the Danville Div. plant.

The agreement with the Stevens organization covers the manufacture and distribution of these products throughout Australia and New Zealand.

"Steady expansion of plant facilities and sales has marked the continuous growth of the Bohn Danville Div., established in 1956," it was noted.

ARA Enters Into Marketing Plan With Australian Firm on Auto Units

DALLAS — ARA Mfg. Co., Grand Prairie, Texas, has entered into an agreement with ARA, Ltd., Sydney, Australia, to market its line of auto and truck air conditioners in that country, it was reported here.

The Australian firm was founded and is headed by F. G. Broughton. He was in Dallas recently to close the deal and inspect operations at ARA's Grand Prairie plant.

C. J. Hughes, credit manager for ARA here, said the agreement will help the ARA plant stay in production the year round.

"In the winter we normally have to curtail production because sales decline," he told the *Dallas Morning News.* "But our winter is Australia's summer, and business there will keep our production line moving."

The newspaper quoted Broughton as saying that the market for auto air conditioners in his country is "completely untouched." He said Australia has more than 4,500,000 autos "and less than 100 of them are air conditioned. We expect to sell a minimum of 5,000 units next season."

The ARA air conditioners will sell for $450 to about $600 in Australia, Broughton disclosed.

"Actually," he noted, "my company was formed about two years ago. We were ready to start our selling operations last year, but in November the Australian government started an austerity campaign, drastically curtailing bank credit and tightening up our economy in general.

"However, in the last month or so—it's getting close to election time—the government has loosened restrictions a little. But they are still strict on imports."

The austerity moves, he explained, were prompted by the fear that England would soon join the European Common Market, endangering its favorable trade arrangements with Commonwealth nations such as Australia and New Zealand.

Broughton said that although the tariff on air conditioning equipment is 55%, this duty—under an arrangement with the government—has been lowered to 7.5% for his company. The arrangement stipulates that Broughton's firm can import and sell ARA units at the reduced tariff rate, but at a later date he must start his own plant.

"In a year or two," Broughton said, "only the component parts will be shipped to us and we will assemble them, purchasing all the 'bolts, nuts, and screws' from local Australian sources."

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Milton Roy Co. Names Procopi

PHILADELPHIA — Milton Roy Co., manufacturer of controlled volume pumps and chemical instrumentation systems in Philadelphia, and St. Petersburg, Fla., has announced the appointment of John Procopi as vice president of international operations.

Procopi will be responsible for marketing Milton Roy products in all areas outside of the United States and its possessions with particular emphasis, initially, on the countries of Western Europe.

Procopi, who has been associated with Milton Roy for the past eight years, organized the company's Market Development Dept. in 1953 and was named sales manager in 1957.

Revere Names Winberg

NEW YORK CITY—Raymond P. Winberg has been appointed vice president of foreign operations for Revere Copper & Brass, Inc., it was reported recently.

Trane Promotes Manget, 4 Others

LA CROSSE, Wis. — Fred Manget was recently promoted to manager of the eastern sales region of The Trane Co., it was announced by W. D. Graham, Trane vice president.

Fred Manget

Graham also announced that Robert C. Binnion has been promoted to manager of the company's Philadelphia sales office, succeeding Manget, and that Thomas E. Kelly was promoted to manager of the New York City sales office.

In a fourth promotion, Donold C. O'Keefe, was named manager of Trane's sales office in Albany, N. Y., succeeding Kelly. O'Keefe formerly worked in the New York office.

Manget joined Trane in 1948. In 1957 he was promoted to manager of the Trane New Orleans sales office and in 1959 was appointed manager of the Philadelphia sales office.

Binnion joined the Trane specialized training program in 1954 and was assigned as sales engineer to the Dallas sales office. He worked out of that office until January, 1960, when he was assigned to company headquarters in La Crosse.

Kelly, son of the late Edward T. Kelly, Manhattan alderman, joined Trane in 1950 and was assigned as sales engineer to the New York City office. In December, 1958, he was appointed manager of the Albany, N. Y. sales office.

2,000 Fedders Dealers To Be In Hawaii In March

MASPETH, N. Y.—Someone else will be shoveling snow off the walks of some 2,000 Fedders air conditioner dealers next March while these retailers are combining business and pleasure in Honolulu, Hawaii.

The Hawaii convention is the latest in the series of sales incentive trips started by Fedders Corp. in 1951, and the first to be conducted by the company during the winter season.

The announcement of the 1962 convention, made here by U. V. Muscio, executive vice president, coincided with the beginning of the firm's 1961 incentive travel program, "an indication of the long and careful planning that goes into the Fedders trips." The first plane load of Fedders retailers arrived recently in St. Croix, Virgin Islands.

Michigan RSES To Hold Clinic Oct. 6

PORT HURON, Mich. — The Michigan Assn. of Refrigeration Service Engineers Society will hold its first clinic on Friday, Oct. 6, at Mueller Brass Co. here.

The program includes an education session at 10 a.m., lunch at noon, and a tour of the plant at 2 p.m., according to Ray W. Jacobs, association secretary.

Acme Opens Miami Office, Names 2

JACKSON, Mich. — Expanding its field sales engineering service in southern Florida, Acme Industries, Inc. announced the opening of a new office in Miami and the appointment of two area sales engineers.

Located at 4646 N.W. 183rd St., Opa-Locka, this office is Acme's third in Florida. Telephone number is NAtional 1-2131.

Sales engineering representatives named are Donald K. Dorini of Fort Lauderdale and Marion K. Cox, Miami.

Dorini was formerly associated with a manufacturer's agent in Miami.

Cox comes to Acme from Jules P. Channing Associates, Miami, where he has been supervising mechanical engineer.

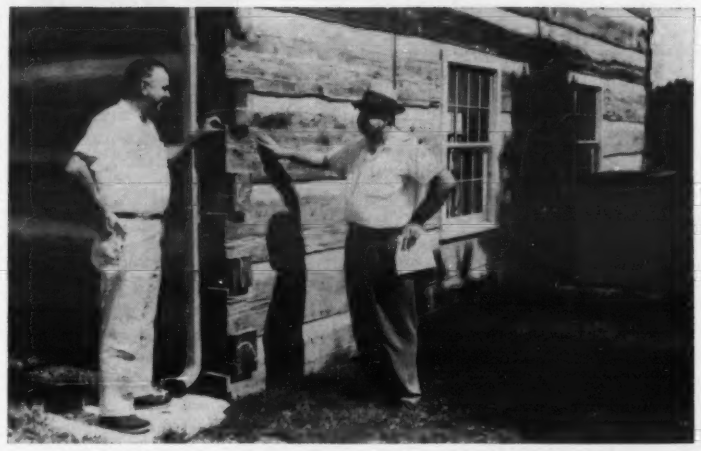
Kentucky Log House Gets Heat Pump

BOWLING GREEN, Ky.—A heat pump manufactured by the Westinghouse air conditioning division is in operation in a log house here.

The eight-room house is built entirely of yellow poplar logs from six pioneer log buildings which were from 125 to 157 years old. The house was built for the Rev. William S. Bolles who designed it himself.

The home is built on a concrete slab with a perimeter loop duct system installed in the slab. Fourteen-inch by 4-in. floor registers were used in the living room and dining area with low side wall perimeter diffusers in all the other rooms.

The heating and cooling unit is a Westinghouse RHP 53 heat pump and was installed by Air Conditioning Industries.



P. J. DAVIS (left), representative of Air Conditioning Industries, and Anthony Hood, who did most of the work on the log house, pose with a 146-year-old poplar log. The outdoor units of the heat pump is in the background.

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LOS ANGELES, CALIF., 120 No. Santa Fe Ave. • OAKLAND, CALIF., 410 Hegenberger Rd.

Trane Strike--

(Continued from Page 1, Col. 2)

About 1,000 non-union employes were continuing to work, according to Trane officials, but the company did not comment on what effect the strike has had on production. The company and the union are meeting periodically with or through a Federal conciliator.

Members of an office workers' union, composed of about 125 employes of the manufacturing division, also went on strike. Tool and die Lodge 1115 made up of about 90 manufacturing employes have accepted the company's offer but were observing the Lodge 21 picket line, according to a Trane spokesman.

Clarence Lokken, president of Lodge 21, said the contract dispute involved both wages and fringe benefits.

Buffalo Forge Gets Pump Order for New Pan-Am Building

BUFFALO — Buffalo Forge Co. has received a sizable new order for the installation of the air conditioning and heating pumps for the huge new Pan-Am building in New York City, it was announced recently.

When the $100-million structure is completed, it reportedly will be the largest commercial office building in the world. It will rise 59 stories and will tower 808 ft above one of the costliest 3½ acres in New York City—above Grand Central Station.

The Buffalo Forge pumps will range in size from 25 to 350 hp and will be required to handle up to 20,000 gals. of chilled water per minute in summer.

Ford To Purchase Philco--

(Continued from Page 1, Col. 5)

to divest itself of its non-electronic products. Its volume in such products has not matched the progress of the industry generally. In air conditioners, for example, Philco in the early postwar years once laid claim to being the leading producer. Now it is in the "second division" of producers, so to speak.

However, in the last few years Philco has taken a leading role in the research and development, and recently in the production of consumer products, in the field of air ion generators. This has something of a relationship to the electronics field, but is also related to air conditioning.

What Ford may do in the air conditioning industry is a matter of conjecture. Not too many years ago, some representatives of the company were making an intensive study of the industry and of the market for air conditioning, and there was talk that the diversification move might be made in the field of air conditioning. Ford has also done much of its own research and engineering work on the automobile air conditioners which are included in its automotive lines.

However, if Ford policy should follow the Philco trend, some feel that it could lead to the motor maker divesting itself of the non-electronic lines.

The Ford Co. statement declared that if the acquisition is approved, Philco will become a Ford subsidiary and its business would "continue without interruption with its current operating personnel."

The acquisition must be approved by holders of Philco preferred and common stock, and will depend on the receipt of satisfactory tax rulings to the effect, among other things, that no Federal income tax gain or loss will be recognized to Philco or its preferred and common stockholders from their receipt of the Ford shares, and to the fulfillment of the conditions in the agreement.

Under the proposed acquisition agreement, holders of 4,104,033 Philco common shares will receive one share of Ford common for each 4½ Philco shares held. Holders of 100,000 Philco preferred shares will receive for each share of stock "shares of Ford common stock approximately equal in value to $101.50, plus cash equal to accrued and unpaid dividends." Ford will also assume Philco's liabilities.

Exact ratio of the preferred exchange will be based upon the market value of Ford common stock shortly before the closing of the transaction, currently scheduled for Nov. 30.

Ford Motor Co. sales last year totaled $5.2 billion, on which it earned $427.8 million. Philco 1960 sales were $400.6 million, on which it netted $2,287,000.

Plans No Cut In Consumer Lines

PHILADELPHIA — In a letter to distributors dated Sept. 7, Philco Corp. declared that it had no intention of cutting out any consumer product lines of merchandise at the present time. Said the letter on this point:

"We have been receiving a number of inquiries as to whether or not Philco is trying to add to or eliminate any of its consumer product lines of merchandise. We have no plans at this time to make any additions to these lines, nor are we planning to eliminate any."

Airtemp--

(Continued from Page 1, Col. 3)

Carillon hotel. The 1962 room air conditioner marketing programs will be unveiled to distributors and dealers aboard the *M/S Bianca C,* which Chrysler has chartered from Jan. 4-10.

Kirby was quoted as saying that Airtemp will add three models to its room unit line.

RSES Names Bodine-

(Continued from Page 1, Col. 4)

company. Bodine is widely known through his many appearances as a speaker before service personnel.

Ralph Jansen, assistant educational director, and Bodine will make their headquarters at the RSES headquarters office in Chicago.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich. Only 25¢ each.

"The Yellow Pages brought us a lead which we turned into a $40,000 contract!"

says Bob MacGregor, MacGregor Refrig. & Air Conditioning Co., Los Angeles, Cal.

Display ad (shown reduced) runs under AIR CONDITIONING CONTRACTORS. Call the Yellow Pages man at your Bell Telephone Business Office to plan your program.

"We ask customers how they found us. That's how we traced the $40,000 contract to the Yellow Pages!"

"Our Yellow Pages program brings in approximately 35% of all our new incoming calls for service."

"All year 'round, our display ad under *Air Conditioning Contractors* and our 7 listings draw good business."

"We display the Yellow Pages emblem on our trucks to remind people where to find us when they want us."

Display this emblem. It builds your business!

Opens In L. A. Oct. 7

Cooling, Heating Equipment To Be Shown At Western Building Industries Exposition

LOS ANGELES — Air conditioning and heating equipment will be among products on display at the Great Western Exhibit Center when the Western Building Industries Exposition opens its four-day run, Oct. 7.

Supreme Aire Mfg. Co. will have in operation its 15-ton "Weathercreator," a complete self-contained heating and cooling package unit designed for roof installation.

Additional electric and gas-fired Weathercreator units from 2 to 15-ton capacity and heat output up to 200,000 Btu will be included along with heat pumps and refrigerating equipment, all primarily designed for commercial and industrial use.

Strip heaters made by Perfection-Schwank, designed especially for use in large hard-to-heat areas, will be exhibited by Harry F. Haldeman, Inc., which will spotlight Perfection's gas infrared heaters of 24,000 and 36,000 Btu for use primarily in non-residential buildings.

Bettcher Corp.'s infrared gas-fired heater for overhead installation in industrial buildings will be shown by George W. Leseman & Co. Cutaway models of this equipment will be exhibited in sizes developing 62,500 and 125,000 Btu.

Western Engineering & Mfg. Co.'s new low-profile "Centridyne" and "Westernaire" hooded exhaust ventilators will also be featured in the Leseman exhibit. Also shown will be Western's filtered air supply unit utilizing permanent filters and delivering 6,000 cfm at 860 rpm with standard ¾-hp motor.

A special feature exhibit of WBIE will be the Residential Planning Center presented by Research House with Southern Counties Gas Co. and Southern California Gas Co. as co-sponsors. The area will provide an information center on residential design, research, and planning and will include large color photo blow-ups, floor plans, and architectural renderings of several showcase and research homes. The center will feature the "Balanced Power" and "Gold Medallion" homes programs.

Another WBIE feature exhibit will be presented by Los Angeles Trade Technical college. A 6-ft by 8-ft cutaway model house will be used to show details of construction and illustrate important points of the school's training programs in sheet metal work and other building trades.

Sponsors of WBIE are ten associations spanning the reaches of the construction fields. Among them are Associated Plumbing & Heating Contractors of Idaho, Inc., and Associated Plumbing & Heating Contractors of Washington, Inc.

Custom-Aire Names John W. Trimm General Manager

SAN FRANCISCO—Appointment of John W. Trimm as general manager of Custom-Aire Products Div. of Pacific Industries, Inc., was announced by John M. Baeza, president of Custom-Aire and vice president of Pacific Industries.

Trimm joined Custom-Aire in early 1960 as controller.

Custom-Aire, the residential and commercial heating and air conditioning division of Pacific Industries, has its headquarters and principal production facilities in San Franciso and additional facilities in southern California and Missouri.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Trane Introduces 'Easy-To-Install, Economical' Head Pressure Valve

LA CROSSE, Wis.—An "economical and easy-to-install" head pressure control valve has been developed by The Trane Co. to improve the cold weather performance of its air-cooled condensers and refrigeration units.

The new control, called the "Trane Unipressure Controller," was designed to be used whenever low entering air temperatures will result in condensing head pressures too low for proper thermal expansion valve feeding and operation.

It may be used on all condensing units and air-cooled condensers which the company makes in the 2 through 50-ton capacity range. It may also be used for multi-circuit condensers with two or more compressors to achieve independent control of each circuit.

TRANE UNIPRESSURE CONTROLLER.

According to Trane, the Unipressure Controller is fully automatic, installation is "as easy as making normal refrigerant piping connections," and no electric or pneumatic power is required.

The company also said the control is inherently explosion proof, the cost is considerably less than "auto-shutters" and two-speed motors, it weighs only 5 lbs, and it will function properly when mounted in any position.

The new control is a self-contained diaphragm type valve which operates on the hot gas by-pass principle. Condensing capacity is modulated by flooding part of the condensing surface with liquid refrigerant. When head pressure falls the valve permits some of the discharge gas from the compressor to by-pass the condenser and enter the condenser outlet line and receiver. This restricts the drainage of refrigerant from the tain the condenser and receiver condenser, flooding it to main-pressure at the valve setting.

TO CUT TUBING COSTS
ON THE DRAWING BOARD

Call Us Early

Value analysis of tubing problems is one of the services Rochester offers refrigeration people. It's a fast way to uncover savings and shrink costs on the drawing board. A Rochester Tubing Specialist might recommend a fresh application that will result in assembly short cuts or reduced waste on your line. And what Rochester recommends, Rochester delivers. Take end processing, as an example. Rochester has full facilities for swaging, piercing, shearing, upsetting, flattening and beading. In addition, Rochester Steel Tubing can be delivered ready for your production line in flat serpentines, cut lengths, or coils up to 3,000 ft. Available either single wall welded, or double wall brazed. To cut your tubing costs on the drawing board, contact the Rochester Tubing Sales Manager. He'll send help fast.

STEEL TUBING BY ROCHESTER PRODUCTS

ROCHESTER PRODUCTS DIVISION OF GENERAL MOTORS, ROCHESTER, NEW YORK

Star Cooler Names Rentschler, Akers

ST. LOUIS—As part of its new expansion program which also includes further product diversification, Charles Scheerer, president of Star Cooler Corp. here, has announced the appointment

H. S. Akers

F. Rentschler

of Fred Rentschler as general sales manager and H. S. Akers as sales development manager.

Rentschler joins Star with a background in the retail automotive field, including district sales manager with Chrysler Corp. He entered the dairy field as southeastern sales manager with a carton company, then became assistant to the sales manager of Savage Ice Cream Cabinet Div. of C. V. Hill & Co., Inc. He will administer the over-all sales program for Star milk coolers, spot merchandisers, and truck holdover cabinets.

Akers was formerly eastern sales manager of Master-Bilt Refrigeration Mfg., Inc.

Gene Soden will continue as sales manager of the Spot Merchandiser Div. of Star, and Harry Johnson as sales manager of the Milk Cooler Div.

Dairy Groups Meet

WASHINGTON, D. C.—Regular autumn meetings of the Milk Industry Foundation, International Association of Ice Cream Manufacturers, and Dairy Industries Supply Association will be held here the week of Oct. 22-27.

Stiles-Radel Opens Branch In Peoria

WAUKEGAN, Ill. — The appointment of William Condon as Peoria branch manager of Stiles-Radel Co. has been announced by James F. Stiles, III, president.

Stiles-Radel, with operations here and in Forest Park, Ill., is a large distributor of food store and restaurant equipment. It has just recently taken over the Peoria area for Hussmann, Frigidaire, and Worthington equipment.

The same facilities already offered to Chicago customers will be an inherent part of the new Peoria operation. A complete sales and service program will be offered in that area.

Condon has had 10 years' experience in the refrigeration business, most of which has been with Hussmann Refrigeration or Stiles-Radel..

G-E Holding Freezer Keeps Frozen Foods Within Busy Chef's Reach

DESIGNED TO ELIMINATE time-consuming trips to bulk storage areas is General Electric's 18.8-cu ft model FV19 holding freezer. Kitchen personnel can load freezer during the less rushed morning hours and work from it all during the busy meal periods, the company points out.

CHICAGO HEIGHTS, Ill.—A new FV19 holding freezer marks the entry of General Electric Co.'s Commercial Equipment Dept. into the commercial refrigeration market.

The department said the unit provides a companion for the HC4 Steamer in operations where the volume reconstitution of frozen foods is a "must," and is recommended for bakery operations where an oven-freezer combination is an automatic requirement.

Now in production, the FV19 is designed for the cooking area —"to keep frozen foods within arm's reach of busy chefs and cooks in every type of food-service operation. Time-consuming trips back and forth to the main freezer are eliminated."

The freezer "accommodates both flat packages and bulky, odd-shaped items," it was stated. "For example, as many as 150 frozen pies can be stored. Solid aluminum refrigerated shelves provide total contact with food packages. Up to 77 lbs of bulky items can be stored in a glide-out basket."

Straight-line sides, top, and back allow the freezer to be installed flush with a back or side wall or in a bank of other equipment. Other features include stainless front, top, and sides; porcelain enamel interior; nine-position temperature selector; alarm light; hermetically-sealed unit; safety latch; and built-in lock.

Bally Readies Fall Service Meetings

BALLY, Pa. — Bally Case & Cooler Co. is currently setting up its schedule for fall service meetings and invites commercial refrigeration firms or service organizations interested to arrange for such programs at present.

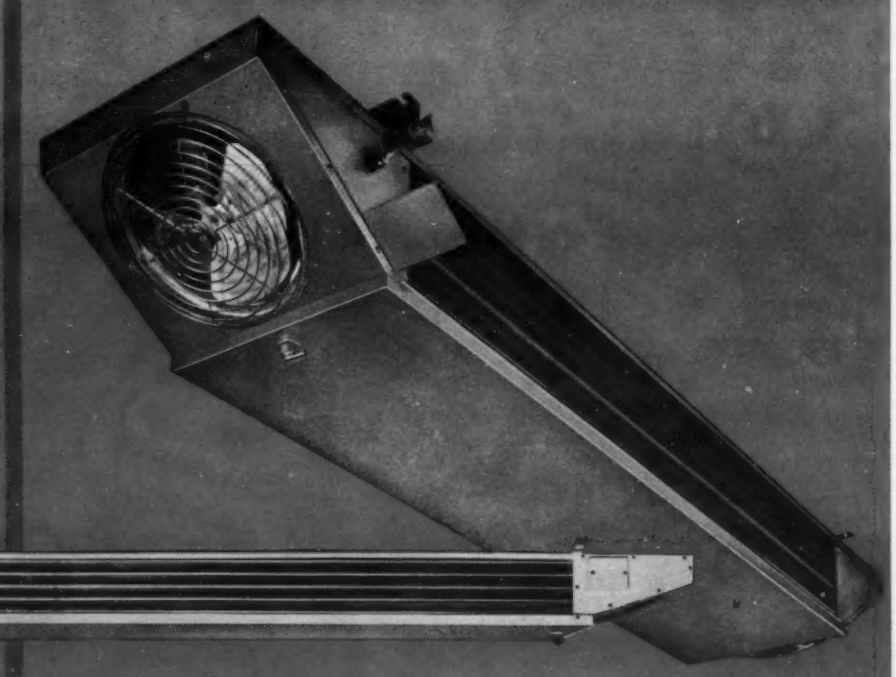
Bally's program is designed to explain the most efficient and proper ways to service Bally equipment. At the same time it embraces new techniques of servicing commercial refrigeration of interest to all servicemen. Charts, cutaways, and parts are used to demonstrate points of interest.

Bally's service department has charge of the program, it was explained.

Another FIRST from BOHN

A Revolution in Unit Cooler Design

BOHN LO-AIRE



Aluminum casings with white enamel finish

FEATURING economical forced air refrigeration coils of very low face velocity

Bohn Lo-Aire Unit Coolers provide positive, low air movement resulting in even temperatures throughout the refrigerated space, while maintaining a high humidity. The Model LO is recommended for fresh product storage above 34° F. There are seven sizes rated from 4,000 to 26,600 BTU/HR at 10° T.D.... economical to buy and economical to install!

BOHN-EL AUTOMATIC DEFROST SYSTEM

For storage temperatures from 28° F. to 34° F., all seven sizes of the Lo-Aire are available with the Bohn-El automatic electric defrost system (Model LOD). This system eliminates wide fluctuations in box temperatures normally associated with air defrost systems and reduces original equipment costs by permitting the sizing of condensing and evaporating equipment on longer running time.

For further information, write for Bulletin 260 or call your BOHN wholesaler.

Buy the known line... the BOHN line... the FIRST line

BOHN ALUMINUM & BRASS CORPORATION

Danville Division • Danville, Illinois

Virginia Chemicals Offers Free Professional Help In Solving Heating Problems of Small Boiler Users

WEST NORFOLK, Va. — Users of small boilers now can get free professional help—available heretofore only through consulting firms — in solving heating system problems, according to Virginia Chemicals & Smelting Co.

At the same time, a complete line of corrective and preventive chemicals has been made available through a nationwide distribution system that can serve small-boiler users in industries, processing plants, institutions, business establishments, buildings, and farms.

These facilities have been made available by Virginia Chemicals & Smelting (known until recently as the Virginia Smelting Co.), which now, for boiler installations rated up to 200 hp or 300 psi (gauge):

- Analyzes water and scale samples sent to its laboratories, and prescribes treatment.
- Makes its nationwide staff of water chemical engineers available to consult with "Virginia" chemical users.
- Markets boiler chemicals for steam - condensate - return heating systems, live - steam - consumer steam generators, and hot water heating systems through a network of wholesalers who supply contractors and service companies.

J. A. Weatherford, director of sales, said Virginia Chemicals' program and products are designed to attack the problems of scale formation and corrosion, the two main enemies of boiler efficiency, safety, and trouble-free operation.

"Two new corrective chemical mixtures available from Virginia Chemicals are for removal of common types of drum scale an eighth-inch deposit of which can cause a heat-transfer loss of 18.5%," the announcement said. "Both contain inhibitors that protect metal surfaces during the cleaning operation.

"Virginia Liquid Scale Remover is a hydrochloric-acid formulation for fast removal of difficult scale deposits. Virginia Solid Scale Remover is a sulfamic acid formula, preferred for use in steam generators when maximum safety in handling, minimum attack on metal surfaces, and non-volatility are desired.

"Virginia Two-Way Boiler Treatment for steam generators is a preventive chemical combining in one liquid concentrate all chemical components needed to assist in producing steam free from carry-over vapors or salts and to promote smoother, quieter boiling. It is called 'Two-Way' because it (1) reduces scale formation and (2) inhibits corrosion in the boiler.

"The Virginia Three-Way Boiler Treatment is a preventive formulation for heating systems with condensate return. The formula includes inhibitors that remain in the boiler and volatile inhibitors that travel with the steam condensate. 'Three-Way' (1) inhibits scale formation and (2) reduces corrosion within the boiler, and (3) protects piping from steam and condensate corrosion.

"The Virginia Circulating Water Treatment is a preventive formulation for closed circuiting systems that use hot or chilled water.

"A blend of crystalline inhibitors and buffer salts, the Treatment protects all metal surfaces in the system by functioning as an antioxidant and by forming a protective film on the surfaces. It is effective in water heated up to 216°F. It is compatible with all anti-freeze solutions.

"The fifth Virginia boiler-treatment product is a special Fuel Oil Additive containing a combustion catalyst combined with solvents and detergents that free oil storage tanks and lines from gums and sludges and promote soot-free combustion."

COMPLETE LINE of corrective and preventive chemicals—and free professional consulting and laboratory service to guide in their use—has been made available to small-boiler users in industries, processing plants, institutions, business establishments, buildings, and farms by Virginia Chemicals & Smelting Co.

Claimed to pay for itself by increasing or maintaining boiler efficiency, Virginia Fuel Oil Additive actually has increased thermal efficiencies by 3 to 5%, it was stated.

Further information about the laboratory and consulting services and the chemical treatments can be obtained from Virginia Chemicals & Smelting Co., West Norfolk, Va.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Handy Tube Bender

Smoothly Bends any pipe or Tubing ¾"-1⅛" O. D.

• Just a twist of the wrist assures perfect, even bends — right angle, any angle, U and offset. Save enough on ONE job to pay for your HANDY BENDER.

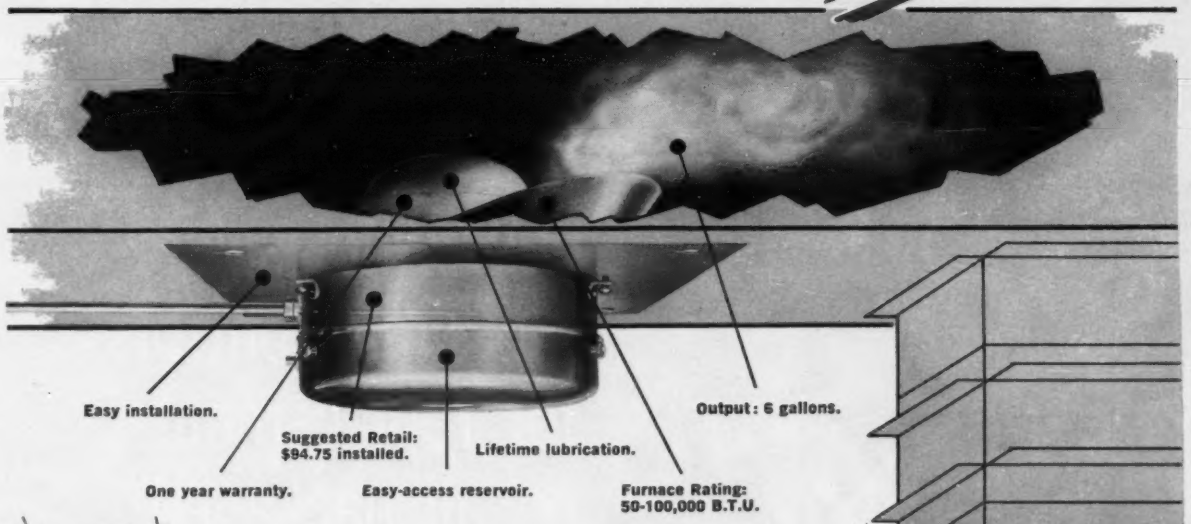
See your supply house—or write for free folder today.

HOLSCLAW BROS., INC.

428 N. Willow Road • Evansville, Indiana

NEW **HIGH PROFIT HUMIDIFIER**

FOR WARM AIR FURNACES by Walton



NEW Walton **WF-J HUMIDIFIER**

The new Walton Model WF-J provides an effective price leader for Walton's complete line of residential, commercial and industrial humidifiers.

Walton Humidifiers are the full profit line with exclusive distribution assuring full mark-up . . . more profit in most instances than from many highly competitive heating and ventilating products and installations.

A volume market exists in your area for top quality humidifiers and Walton has more than 25 years of humidification manufacturing experience to attest its leadership and quality.

THERE IS NO REASON TO SELL LESS THAN THE BEST

THESE MEAN REAL PROFIT!
- Full Mark-Up
- Added Sales
- Low Inventory
- Complete Line

27 Models for Every Type of Heat . . . Every Installation

RESIDENTIAL-INDUSTRIAL

FURNACE MODELS | PORTABLE MODELS | DUCT TYPES | SPACE TYPES

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Eastern Region: 1186 Grove Street, Irvington 11, New Jersey, ESsex 4-9600 / Western Region: 548 W. Washington Blvd., Chicago 6, Illinois, FRanklin 2-2298

WRITE FOR FREE INFORMATION TODAY!

Walton LABORATORIES, INC.

Please send FREE information on Walton's program for building humidification sales plus the name of the nearest Walton Distributor.

Distributor Inquiries Also Welcome

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COMPANY_____

POSITION_____

ADDRESS_____

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$15 Million High Rise Apartment Project In Los Angeles Will Be Air Conditioned with Modern Gas Air Conditioning

LOS ANGELES — Wilson Park, a $15 million high-rise apartment project overlooking the Pacific Ocean will be completely air conditioned with one of the most modern gas systems ever used strictly for residential purposes in southern California, according to Southern Counties Gas Co.

The Wilson Park project will consist of a complex of six ultra-modern buildings rising as high as 16 stories in Pacific Palisades, a suburb within the city limits of Los Angeles.

Robert K. Von Der Lohe, manager of commercial and industrial sales for Southern Counties Gas, two central air conditioning systems with a total cooling capacity of 190 tons are scheduled for installation in the first two sections of the project.

A cooling capacity of 80 tons will be used to air condition twin five-story buildings. Another 110 tons of cooling will be installed to service two eight-story structures.

Final section of Wilson Park will be two 16-story buildings. These too, say the developers, will be air conditioned with gas equipment. An approximate capacity of 250 tons will be required for these two structures.

York equipment will be used on the two Wilson Park buildings now under construction. A York EK-10 steam actuated lithium bromide absorption unit will serve the two eight-story buildings, while a York EK-8 will be used for the five-story structures.

The three-pipe system will permit simultaneous cooling in one and heating in another, said Von Der Lohe. Some of the larger three-bedroom apartments will have as many as three separate air handling units, making three separate "zones" for temperature control.

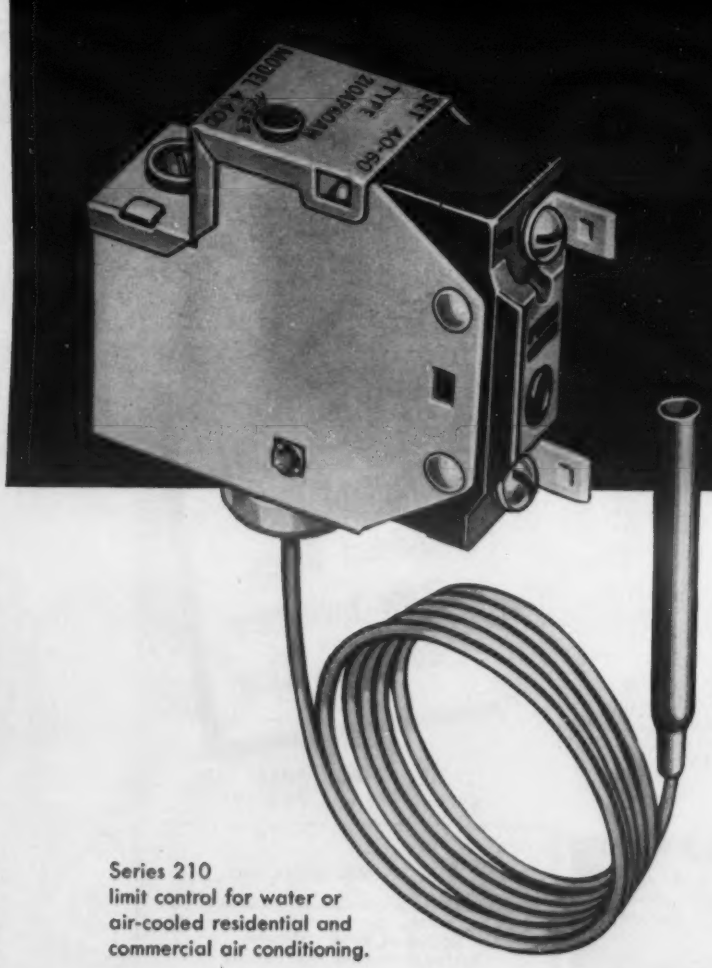
The gas air conditioning systems at Wilson Park were engineered by Howard Helfman Co., mechanical engineers of Glendale, Calif. Architects for the project are Pollack & Drazan, Inc.

The first four buildings will be completed by autumn of 1962, the developers say. The entire project, when completed will contain 400 apartments.

NOW!
NO MORE
WAITING

Servicemen... here's the best news ever!

your wholesaler has limit controls for replacement on all packaged air conditioning



Series 210
limit control for water or air-cooled residential and commercial air conditioning.

Penn universal replacements help you give immediate service

Now . . . Penn's Series 210 limit control, widely-used by manufacturers of packaged residential and commercial air conditioning, *is available for field replacement.* And, with its adjustable pressure range, it will fit the specifications of any air conditioner manufacturer.

No more waiting . . . no more disgruntled customers . . . simply go to your wholesaler and get immediately the correct replacement for the high or low limit control. Your wholesaler has a handy Penn cross-reference chart which makes proper selection fast and easy.

Remember, to give your customers prompt service . . . go to your wholesaler and ask for the Penn Series 210 limit control.

PENN CONTROLS, INC. Goshen, Indiana

EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Housing Act Parleys Planned for 75 Cities In Early November

WASHINGTON, D. C.—Federal Housing Administration Commissioner Neal J. Hardy announced the full cooperation of his agency in the nationwide educational campaign on the Housing Act of 1961, which the National Association of Home Builders is sponsoring in November.

This campaign, Hardy said, will consist of a series of meetings scheduled to run between Nov. 6 and Nov. 18 in the 75 cities where FHA has insuring offices.

Key officials of these FHA offices will explain the various provisions of the new law and discuss the FHA regulations, procedures, and requirements governing the programs authorized by these provisions.

All-day conferences will be held in each city, with the morning session devoted to "FHA Financing for Single-Family Homes" and the afternoon session to "Special FHA Programs for Multifamily Dwellings."

G-E Announces Staff For Residential Market Development

LOUISVILLE, Ky. — A new advertising and sales promotion staff for General Electric's Residential Market Development Operation (RMDO) was announced by George Bogard, manager of the operation.

Dabney Tunis has been named manager-advertising and sales promotion (A&SP), and Richard O. Parrish has been selected as specialist-A&SP.

Tunis succeeds John F. Hippen who has been appointed manager-western RMDO region. Parrish replaces Wally Ross who is now the northwestern electric comfort heating specialist for G-E's Wiring Devices Dept.

General Electric's RMDO program is national in scope and designed for local area application to assist builders in the sale of Medallion homes—homes containing at least four major appliances, full housepower wiring, light for living, and wherever possible, electric heating.

Pohlig Represents Janitrol In Virginia

COLUMBUS, Ohio—The appointment of H. A. (Joe) Pohlig as sales representative in Virginia for the Janitrol Heating & Air Conditioning Div., Midland-Ross Corp., has been announced by C. C. Owen, national field sales manager.

Prior to joining Janitrol, Pohlig served as sales manager of the heating, air conditioning, and appliance division of a Richmond wholesale firm.

A MASTERPIECE FROM ANY VIEWPOINT. What distinguishes the "best" from the rest? In the case of Bendix-Westinghouse compressors and condensing units, it's higher standards in design, engineering, production, and quality control. Our goal is always this: to provide products that are "masterpieces" of dependability, efficiency, and economy. Turn the page for information on a super-capacity 115-volt compressor.

Bendix-Westinghouse MOTOR COMPRESSORS

11,000

BTU CAPACITY

WITH THIS 12-AMP., 115-VOLT BENDIX-WESTINGHOUSE COMPRESSOR

No need for your window air conditioner customers to spend extra money wiring up for a 230-volt circuit when your units are equipped with this efficient Bendix-Westinghouse compressor. For it delivers a full 11,000 BTU capacity *on a 115-volt circuit.*

Another big advantage of this 1-h.p., 2-pole model is that it requires no mounting straps or other external gadgetry. Since its springs are internally mounted, it can be bolted down in your unit permanently — and easily.

There are many other *extra values* for you and your customers with this compressor. For example, it saves shipping costs because its modern, compact design reduces weight. And servicing is easier because the compressor's tubing connections and terminal box are on top. Ask about model YCH232VA-1.

For the quiet, efficient operation so critical in window air conditioners, rely on Bendix-Westinghouse compressors. There's a model to fit every need. Write or call.

Bendix-Westinghouse

EVANSVILLE, INDIANA

A Division of Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio

Export Sales: Bendix International, 205 E. 42nd St., New York 17, N. Y.; Peter A. Karl, Inc., Union Station Bldg., Utica 2, N. Y.; Sabal-Kielmann, Inc., 15 William St., New York 5, N. Y.

New Type Centrifugal Fan Solves Space, Noise Problems In Coal Bldg.

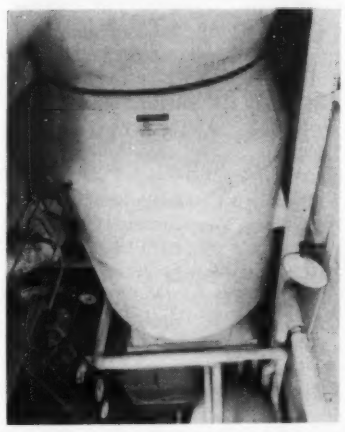
WASHINGTON, D. C. — A new type of fan combining a high output with small over-all dimensions solved a major air conditioning problem at the new Coal Building here.

A modification of the air conditioning system of the nine-story building required the installation of a 26,000 cfm return air fan. The only suitable place for it was in the existing boiler room.

However, space limitation made it impractical to install a conventional centrifugal fan of the required capacity.

An additional problem was that the fan had to be hung from a monolithic concrete slab. The telephone switchboard and reception room are located directly overhead. Any sound emitted by the fan would travel rapidly through the slab and marble-lined lobby walls.

Consulting Engineer Nash M. Love suggested a 45-in. "Centriline" fan, which had just been put on the market by the Sturtevant Div. of Westinghouse Electric Corp. It has an outer diameter of 65 in. and a length of 81 in.



WESTINGHOUSE "Centriline" return air fan of 26,000 cfm has outer diameter of 65 in., length 81 in.

Design Advantages

Through its special design this fan combines the advantages of Airfoil-bladed centrifugal fan performance with the space-saving features of straight-line air flow.

The space-saving feature of this centrifugal type fan is achieved through the use of an Airfoil blade centrifugal wheel which enables the air to follow the blade contours closely, preventing noise-producing turbulence on the upper blade surface and providing highly efficient volume flow within a compact casing.

The sound level of the Centriline fan is so low that switchboard operators don't even know it runs right below their feet, says Louis Laforet, construction engineer of the National Coal Association.

Heating, Cooling System Boilers Fired by Coal

The Centriline fan now forms part of a high-velocity air heating and cooling system, consisting of two coal-fired "Coal-Pak" automatic steam boilers, a 128-ton absorption unit, and a 34,000 cfm air handling unit with heating and cooling coils.

Generating about 2,500 lbs of steam per hour each, the boilers provide steam for the heating coils all the year round as well as for the absorption unit during the cooling season. Water for cooling coils is chilled to 42°F.

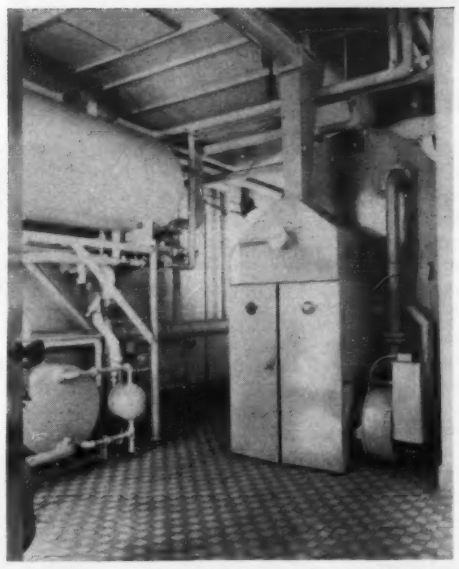
Air distribution of both hot and cold air is through separate duct systems to mixing boxes, thermostatically controlled from the rooms which they serve.

Total air conditioned space of the nine stories is 32,450 sq ft. In addition to the 128-ton unit, a 20-ton unit is used for interior spaces.

Return air travels through a main duct to the Centriline fan. During both heating and cooling seasons the fan operates at 100% capacity, moving 26,000 cfm. With the air handling unit moving about 34,000 cfm, about 8,000 cfm of fresh air is thus provided.

In transitional seasons, 100% outside air may be used. In that case, 100% of the return air from the Centriline fan is relieved directly to the outside through special louvers.

Coal as a fuel for boilers is competitive with any other fuel used on similar installations, Laforet states. Cleanliness of automatic coal firing is evidenced by spotless, sparkling appearance of the boiler room.



BOILER ROOM of Coal Building sports spotless cleanliness in spite of coal fired boilers. Westinghouse Centriline fan for return air of air conditioning system is seen squeezed in upper right-hand corner where, it is claimed, no other fan of same capacity would have fitted in.

Mechanical contractor for the modifications of the system and the installation of the fan was R. M. Thornton Co., Inc., Washington, D. C.

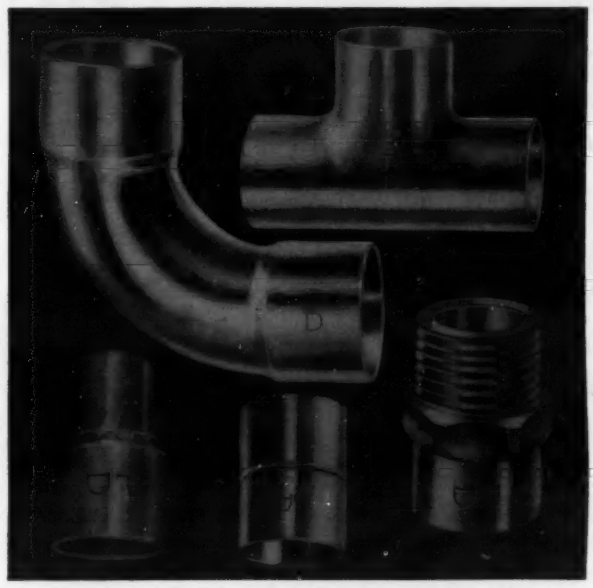
For Your Reprint Copy

"Short, Short Course in Air Conditioning Fundamentals." By D. C. Schaffer. Mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich. Only 25¢ each.

WHY YOU SHOULD SPECIFY

Phelps Dodge

A complete line of Copper Refrigeration and ACR Tube, and Wrot Fittings from one Source!



1 NEW WROT SOLDER-TYPE FITTINGS. Phelps Dodge has added a wide range of fittings in sizes from ⅛-inch to 6 inches. All fittings are protectively packaged for factory-clean delivery.

2 COLOR-CODED ACR TUBE WITH O.D. MARKINGS. Phelps Dodge ACR tube is specially cleaned for refrigeration use. Extra-long coded end caps are your assurance of factory-clean tube at job site. Tube is color-coded for fast identification and marked with outside dimension.

3 NEW P-D PAK CARTON. Reel-type design of convenient new carton allows refrigeration tube to be rolled or paid out quickly on the job. Color-coded tape seals carton for protection, yet opens easily.

Quality tube and fittings sold the quality way—through authorized refrigeration wholesalers!

AIR-CONDITIONING AND REFRIGERATION WHOLESALERS A-R-W ASSOCIATE MEMBER

PHELPS DODGE COPPER PRODUCTS CORPORATION

New York, N.Y. • Los Angeles, Calif.

P D MINE TO MARKET

Utility Puts Gas Air Conditioner Outside, Gives Patrons Shot of Cooling at Entranceway

SHELBYVILLE, Tenn. — An unusual display is helping boost sales of gas air conditioning for United Cities Gas Co. here.

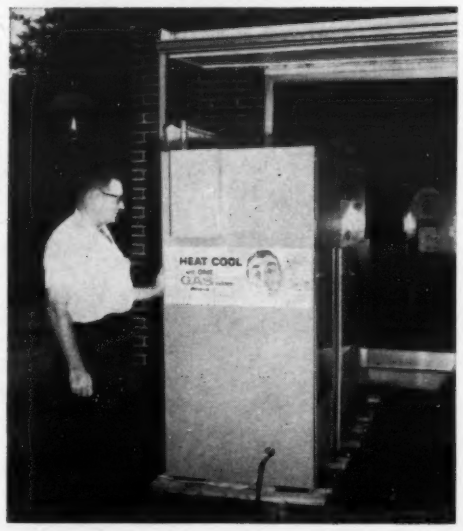
The company recently installed an Arkla model 500C "remote" gas cooling and heating unit just outside the entrance to its Shelbyville office.

It supplies chilled water (for summer operation) to a fan-coil-filter air handling unit which is located inside and blows cool air on the entranceway.

This graphic demonstration of the practical comfort benefits of gas cooling has proved a big sales booster for United Cities Gas, according to the company's Shelbyville manager, Bill Copeland.

"Inquiries about gas air conditioning have increased tenfold and actual sales have more than tripled since we put in the entrance unit display," Copeland reported.

"Conventional floor displays and sales materials are all effective selling aids, but a display like this which permits a prospect to see *and feel* the comfort benefits of gas air conditioning is a very effective attention-getter."



UNITED CITIES Gas Co. Manager Bill Copeland in Shelbyville, Tenn., demonstrates Arkla gas air conditioning unit entrance display at company's local office. Companion fan-coil, filter air handling unit blows cool air on customers as they pass through entranceway. Copeland reports that inquiries about gas air conditioning have increased tenfold and actual sales have more than tripled since display was put in.

Producers Council To Vote on Slate Of Officers Sept. 20

WASHINGTON, D. C. — A slate of new officers for the Producers' Council, national organization of manufacturers of building products and equipment, has been submitted to the official representatives of the 121 companies and 31 trade association members.

The nominations will be acted upon Sept. 20 at the council's 40th Annual Meeting and Chapter Presidents' Conference, Sept. 20-22, at the Pittsburgh Hilton in Pittsburgh.

Nominated for a second term as president is Elmer A. Lundberg, director of Architectural Services for Pittsburgh Plate Glass Co.

Newly-appointed general marketing manager for Barrett Div., Allied Chemical Corp., Don A. Proudfoot, has been nominated for a second term as first vice president.

Charles S. Stock, manager of central marketing, American Air Filter Co., has been proposed for the post of second vice president.

Earl F. Bennett, a moving force in the council's educational seminars — curtain wall, roofing, and now air conditioning—has been submitted for his second term as secretary. Bennett is the director of architecural sales for the Koppers Co., with home offices in Pittsburgh.

Incumbent Hal Cramer, manager of agency and construction sales for Westinghouse Electric Corp., Pittsburgh, has been renominated for treasurer.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Dunham-Bush Makes 4 Sales Appointments

WEST HARTFORD, Conn. — James A. Mulcahey, vice president in charge of sales, Dunham-Bush, Inc., recently announced four appointments:

Harold E. Taylor as sales engineer in the Boston office.

Edwin C. Colwell to represent Dunham-Bush air conditioning products in Cleveland.

Richard C. Ollerman as sales engineer responsible for the company's air conditioning and refrigeration products, sales to wholesalers in Minnesota and North and South Dakota.

Noel W. Wells of Sacramento, Calif., to represent Dunham-Bush heating and air conditioning products.

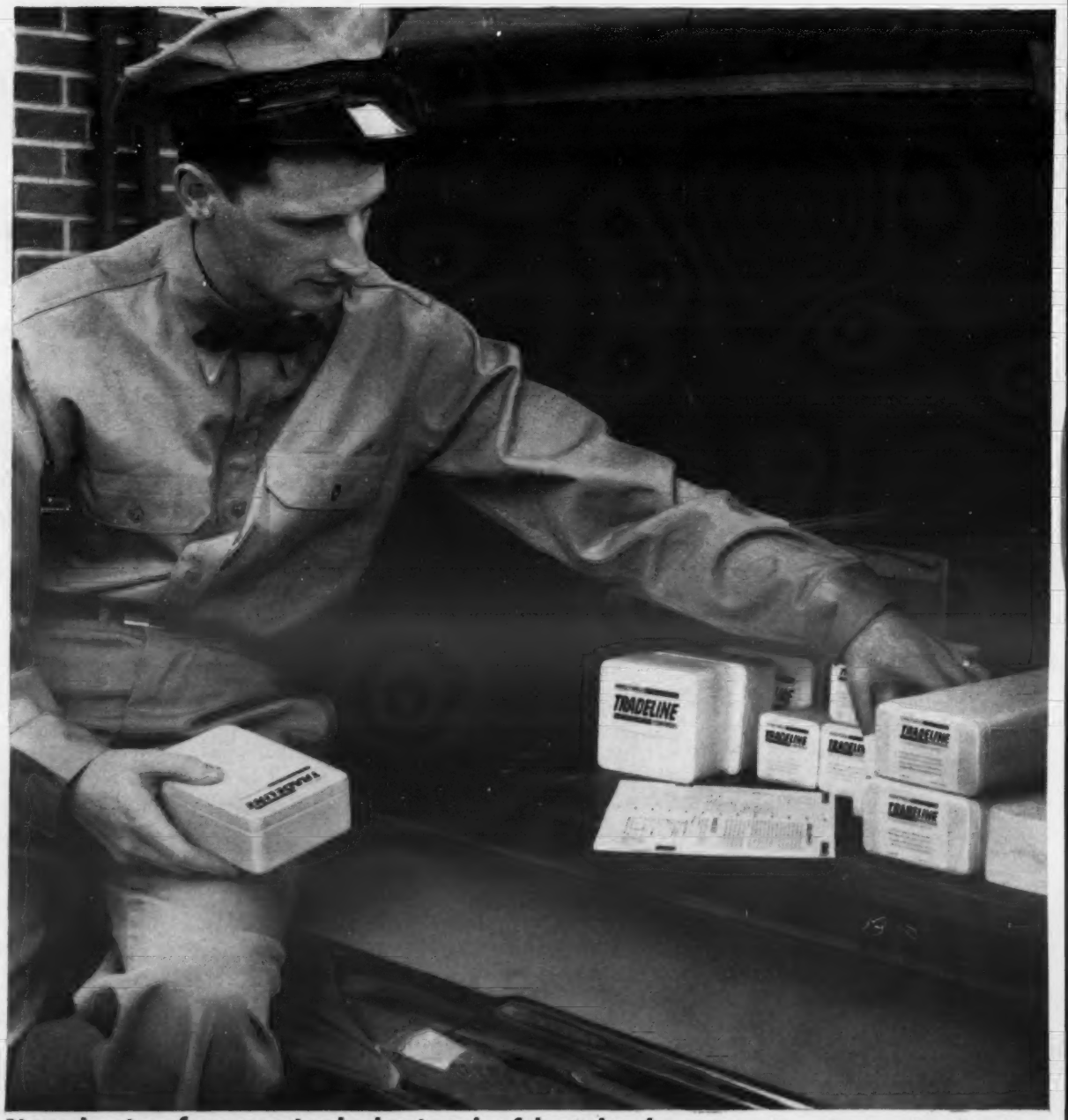
Mulcahey noted that Taylor is well known in the New England area, with 25 years background in air conditioning, having engineered systems for Statler-Hilton, Sylvania Electric Products, Raytheon, Carling Brewing Co., Avco, First National Stores, and others. Taylor formerly was associated with York Corp.

Colwell formerly was associated with Hattenbach Co. and H. O. Terice Co. in Cleveland. Ollerman has been associated with General Geophysical Co. and Gartner Refrigeration & Mfg., Inc. Wells has served in an engineering capacity for mechanical contractors in the Sacramento area.

A. H. Tinnerman Dies

CLEVELAND — Albert H. Tinnerman, 82, chairman of Tinnerman Products, Inc., died recently. Developer of a steel nut spring tension fastener which was patented in 1924, he built the company into one of the leading manufacturers of fasteners.

NEW! Just a few Honeywell truck can handle up to



Now just a few controls instead of hundreds. Honeywell engineers selected and re-engineered 170 basic controls that do the job of 18,000 or more! Just a handful of TRADELINE Controls on your truck normally take care of up to 93% of all your service needs.

$12 Million Structure

United Engineering Center Cooling System Uses New Induction Unit

NEW YORK CITY—What is said to be a new approach to the control of air temperature in office buildings is used in the recently-opened, 20-story, $12 million United Engineering Center here.

The air conditioning system was designed by the New York engineering firm of Jaros, Baum & Bolles for a building to house 19 of the nation's major engineering societies.

The structure is the first large office building to use a new under-window induction unit developed by Carrier Air Conditioning Co., which varies its heating and cooling output by changing the air path through the unit.

Chilled water for the 375 "Bypass Weathermaster" units and the central apparatus is supplied by a Carrier centrifugal water chiller and an absorption refrigerating machine working in tandem to deliver 900 tons of capacity.

According to Hermann Hoffmann, general sales manager for Carrier, a sensitive damper in each unit controls airflow from the room through or around the heating or cooling coil. A change in heating or cooling requirements is almost instantly met by sending a larger or smaller amount of the air through the coil.

In addition to the bypass air control, the new unit's discharge grille sections are locked in place to prevent tampering and a redesigned cooling coil arrangement permits easy cleaning from the front of the unit.

Chilled water for the system is produced by combining the centrifugal and absorption refrigerating machines.

Steam from New York Steam Co. mains at 125-lb. pressure enters the turbine to drive the centrifugal. Steam leaves the turbine at 13 lbs pressure and enters the absorption chiller where it is condensed and returned to the power plant.

According to Hoffman, the tandem system works more efficiently and economically than either unit operating alone.

The United Engineering Center was designed by architects Shreve, Lamb & Harmon Associates and was built by the Turner Construction Co. Kerby Saunders, Inc., installed the air conditioning system.

Leasing Air Conditioning Can Be Beneficial, Building Owners Told

WASHINGTON, D. C.—"One of the most interesting, and highly beneficial, trends in air conditioning today is the leasing of entire air conditioning systems."

So stated T. Y. Davis, Middle Atlantic regional sales manager for York Corp., in a report to the Building Owners & Managers Association Property Management Clinic held here.

In discussing ways of bringing the benefits of air conditioning to existing buildings, Davis said the trend toward leasing opened all kinds of possibilities to this group . . . "it's possible to make a real capital improvement without expending huge amounts of capital, and it does not affect one's borrowing capacity."

He also discussed the various ways of adding air conditioning to existing buildings, and frankly compared the merits of "packaged" and "customed" air conditioning installations.

"Packaged installations are naturally less expensive and provide somewhat greater flexibility in operation. But, a custom, central station installation, although costing more, will last longer," Davis declared.

"After installing air conditioning, whatever type it may be, I can't stress strongly enough the absolute necessity for good, competent preventive maintenance. It costs money to operate an air conditioning system . . . in manpower, cleaning and maintenance, and for the prime mover. All these costs can be controlled and held to a minimum with a thorough preventive maintenance policy."

"Controls . . . often overlooked in a maintenance and service operation can cause real trouble for you. It's easy to make sure that all switches, thermostats, etc., are kept in good repair and replaced as soon as wear begins to take its toll. That way you'll eliminate complaints and discomfort."

David also spoke of the change in prime movers, and told the BOMA Clinic to be sure to at least investigate the possibility of the use of steam or gas in air conditioning.

"With today's structure being built with air conditioning, all of us with existing buildings must evaluate where we stand in the market of selling square feet of floor space," Davis said.

American-Standard Appoints W. A. McCabe

NEW YORK CITY — American-Standard's Air Conditioning Div. has announced the appointment of William A. McCabe as eastern regional manager.

W. A. McCabe

After receiving his M.B.A. degree from the University of Chicago Graduate School of Business Administration, McCabe was instructor in marketing at Northwestern university. He subsequently gained sales management and marketing experience at both manufacturer and distributor levels.

McQuay Sets Dividend

MINNEAPOLIS — The board of directors of McQuay, Inc. has authorized the regular quarterly dividend of 12½ cents per share on the company's 418,932 outstanding shares of common stock, it was announced by B. E. James, president.

The dividend will be paid Oct. 2 to the stockholders of record Sept. 15.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

*TRADELINE** controls on your 93% of your service needs

Eliminates extra trips for right controls...means more money for you...better service to your customers

Now Honeywell introduces a revolutionary new approach to eliminate the confusion in controls stocking. It's TRADELINE—the new way to streamline your control stock.

Honeywell engineers selected and re-engineered 170 controls that will do the job of 18,000. And do the job right! Since TRADELINE Controls will handle up to 93% of all common control installations, you just carry a few controls instead of hundreds.

With TRADELINE Controls you can now afford to carry the right controls on your truck and eliminate extra trips and wholesaler pickups for controls.

And, you can always depend on your wholesaler to have the right control if he stocks TRADELINE.

The savings in time alone, by eliminating unnecessary extra trips for the right control, will help put you in business with your initial stock of TRADELINE Controls. From there on, you're making money, plus giving your customers faster, more efficient service.

PROVED IN TWO-YEAR TEST!

The TRADELINE idea of a few controls replacing hundreds has been tested for two years in the Southwest with hundreds of dealers. It's a proved way to increase your business.

FIND THE RIGHT CONTROL IN POCKET GUIDE

A new, pocket-sized cross reference guide tells you instantly which basic TRADELINE Control is needed. It's available from your wholesaler.

Call your wholesaler today and get him to assemble the proper TRADELINE Controls for your needs.

* TRADEMARK

THE NEW WAY TO STREAMLINE WHOLESALERS' AND DEALERS' CONTROL STOCK

NEW, TOUGH STYROFOAM PACKAGE!

New idea in packaging. The Honeywell Round, V80 and V81 gas valves, pilotburners, thermocouples and the Y400 Powerpile package are among the first TRADELINE Controls to be nestled in handsome Styrofoam containers. Handy, neat, controls can't be damaged on truck.

HONEYWELL

HONEYWELL TRADELINE CONTROLS

HONEYWELL INTERNATIONAL—Sales and service offices in all principal cities of the free world. Manufacturing in the United States, United Kingdom, Canada, Netherlands, Germany, France, Japan.

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

Forget aspirin—heat a key in a fire, then drench it in cold water, and place it on your forehead! Another homely "cure": Hold a key against the nape of the neck to cure nosebleed.

Religious Verification

All religions attach symbolic value to the key as a power to open heaven and deny hell. "And the key of the house of David will I lay upon his shoulders; so he shall open, and none shall shut; and he shall shut, and none shall open." (Isaiah 22:22)

There is an interesting echo of these words in the famous passage (Matt. 16:19) in which Jesus confers "the keys of the kingdom of heaven" upon Peter.

Two crossed keys dominate the coat of arms adopted by the Vatican, incidentally.

Status Symbols

Keys always have been status symbols. In ancient Rome, a bride was given the keys to her household—and was considered divorced if her keys were taken away.

In the 15th and 16th centuries, keys were entrusted in continental Europe only to certain (well, "key" officials) and possession of them was a mark of power and prestige.

American mayors bestow the "key to the city" on visiting celebrities. But that key to the White House—Back Door? Senator Dirksen confesses that he bought it in a drugstore.

Want a key to Fort Knox—Side Door? It's yours for just 29 cents in a dime store. If you can't afford a new car this year, you can console yourself with a key and chain marked "Rolls Royce"—or one imprinted: "Stolen Car."

According to Cole National, the American public carries in its pockets and purses a staggering 12½ million pounds of keys each day . . . and loses 3 tons of them every week!

When keys can't be found, locksmiths sometimes are called upon to extricate babies, children, pets, and red-faced adults from attics, bathrooms, cars, cellars—even public rest rooms.

People are careless about their keys astoundingly.

The homeowner who installs an expensive lock on the front door often has a lock on his garage a moron could pick with a piece of wire.

The motorist who leaves ignition keys in his Chevrolet while he shops is making it easy for a car thief.

Nevertheless, at least three magazine articles you'll read this month begin: "The Key To . . ."

Stories of the Week

Wide-ranging Vice President Lyndon Johnson met Chief Ben Wildhorse of the South Dakota Sioux Indian tribe recently, on the latter's home grounds.

Chief Wildhorse advised "Lucky Lyndon":

"Be careful about your immigration program, young man. We Indians were careless with ours."

Novelist Sinclair Lewis lectured a group of college students who planned literary careers. Lewis opened his talk by asking:

"How many of you really intend to be writers?"

All hands went up.

"In that case," resigned Lewis, returning his notes to his pocket, "my advice to you is to go home and write."

Subscriber who, understandably, wishes his name concealed, reports that he sent a postcard from his vacation-spot in Honolulu back to his office gang, to wit:

"Having wonderful time. Wish most of you were here."

At the fifth reunion of Yale's Class of 1956 an "Old Grad" pontificated:

"I had a theory that the World had an opening for me."

"Did you find that opening?" closed in one of his mentors.

"Yes. I'm in the hole for everything I'm trying to own or obtain."

Gags of the Week

See one Brigitte Bardot movie and you've seen her all.

Pity the grouch—he's a guy who has sized himself up and got sore about it.

Any time you feel indispensable, take a walk through a cemetery and study the tombstones.

Quotes of the Week

The world would be better and brighter if our teachers would dwell on the Duty of Happiness as well as on the Happiness of Duty, for we ought to be as cheerful as we can, if only because to be happy ourselves is the most effectual contribution to the happiness of others. — JOHN LUBBOCK AVEBURY.

The trained "specialist" has replaced the social "aristocrat" in community leadership, a study of the Syrcuse Metropolitan area by Syracuse university sociologists has shown. They found that technically trained persons are natural candidates for community and leadership roles, because of the complexity of today's problems.—*Science News Letter.*

The real evil in the world is not the spectacular, the occasional, the vividly catastrophic. The real evil lies in our neglect of causes, our indifference to conditions, our unwillingness to give the time, the money, and the effort to stop *preventable disaster.*—SYDNEY J. HARRIS.

As there are no nations who cannot learn from us, so also there are no nations from whom we cannot learn. No one can be understood who does not seek first to understand. — CLARE BOOTH LUCE.

Trade can help man to conquer himself. All physical conquests are of secondary importance unless human values have priority. In trade, man shows a new gain as a thinking creature with a sense of responsibility to his fellow man. Trade keeps the gates open, and when there is a constant exchange of goods, services and credits, there is always hope for progress toward understanding. — DUN'S REVIEW.

WE GO TO GREAT LENGTHS
TO SATISFY YOUR NEEDS...
. . . in fact up to 2000 feet of copper tube in a single continuous coil!
Viking's specially-designed "Bull Blocks" draw the tube at the rate of 1500 feet per minute. A unique conveyor system, designed by Viking, automatically moves the coils to finishing operations and rigid tests for hardness, wall-thickness, and roundness.
You can have continuous coil tube from Viking in a large variety of lengths made on specially designed equipment, by the newest scientific methods, under the supervision of skilled personnel. But whatever you order, one thing is certain: we go to great lengths to make sure you get what you ordered: the finest quality copper tube for refrigeration and air conditioning applications.
VIKING
COPPER TUBE CO.
CLEVELAND 10, OHIO

Gibson Service Clinic Shows How Good Service Can Be Simpler Than Poor Service

By Frank J. Versagi

PANAMA CITY, Panama — That good service can be simpler than poor service was illustrated graphically by Bob Rivett, national service manager of Gibson Refrigerator Div., Hupp Corp., during a service clinic held here in conjunction with the introduction of the company's 1962 line.

"Give Better Service — Live Longer," said Rivett. "And we mean *live longer* in two ways. Your business will last longer and you, personally, will last longer because of less wear and tear on your nerves and physique."

Gibson's service manager took a typical service call and followed it through — once handled poorly, once handled well. "Even a printed description of the two method shows how much simpler the correct method is," Rivett said.

And here are the printed versions of his examples:

●

OUTLINE OF IMPROPER HANDLING OF SERVICE CALL

1. Dealer receives call from customer, July 31.
   a. Promises to check her appliance that day.
   b. Customer again contacts dealer Aug. 2 concerning service.
   c. Dealer contacts customer, Aug. 3.
2. Inspection of appliance.
   a. Dealer's serviceman, without distributor training or manuals, condemns pump as compressor fails to start.
   b. Serviceman advises customer to contact distributor as they stock no parts.
   c. Serviceman decides to pull compressor.
   d. Suction and discharge lines left open.
3. Customer calls distributor's serviceman, Aug. 4.
   a. Distributor does not have compressor — will order from factory.
   b. Decides to hold order a couple of days as they may have additional requests for parts.
   c. Customer calls, Aug. 10— Factory is promptly blamed for being slow in part handling.
   d. Order sent to Factory, Aug, 11.
   e. Distributor received compressor, Aug. 18.
   f. Customer called distributor and was very angry because of delays. Distributor asked customer to contact dealer to follow her problem.
4. Installation of compressor.
   a. Dealer picked up compressor, Aug. 21.
   b. Compressor installed, Aug. 22—serviceman spent four hours due to lack of "know how."
   c. After installation unit would not operate—Factory criticized for sending out defective unit.
   d. Compressor removed and taken to distributor—unit found to operate okay on direct hook-up.
   e. Distributor didn't have proper relay—order placed with factory, Aug. 23—arrived Aug. 29.
   f. Customer threatens lawsuit, Aug. 30.
   g. Dealer's serviceman reinstalls same compressor with new relay, Aug. 31.
   h. Customer's refrigerator overcharged—left frosting out the suction line.
5. Customer refrigerator very noisy and defrosting periodically.
   a. Customer told by dealer to contact distributor — distributor asked customer to write factory as they were unable to be of further help.
   b. Distributor urged by factory to inspect refrigerator.
   c. Distributor found pool of water on floor and floor tile curling up, Sept. 11.
   d. Refrigerator malfunction due to moisture and foreign matter in system, also overcharged due to previous improper service; distributor's serviceman recommends change of complete system.
   e. Customer demands refund of purchase price of refrigerator and requests to have it removed at once.

RESULT—A most dissatisfied customer who will "knock" Gibson Appliances.

●

THIS IS HOW IT SHOULD HAVE BEEN HANDLED

1. Dealer receives call from customer, July 31.
   a. Dealer's serviceman checks her appliance that afternoon. (Serviceman had attended distributor training school and reviewed Gibson manuals and followed factory procedures.)
2. Inspection of appliance.
   a. Compressor will not run.
   b. Control is "shorted out"— compressor still fails to start.
   c. Serviceman checks compressor on direct hook-up and unit operates perfectly.
   d. Relay determined defective.
3. Serviceman calls distributor requesting proper relay by part number.
   a. Relay received by dealer, Aug. 2, and promptly installed.
   b. Refrigerator operating A-1 — customer delighted with Gibson and their prompt and efficient handling of service.

RESULT—A Gibson Booster!

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

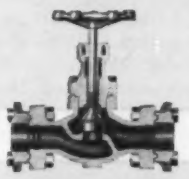
Only 25¢ each.

HENRY VALVE CO.
CONTROLLING FLOW SINCE 1914

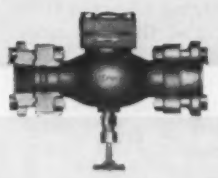
INSIST ON HENRY AMMONIA VALVES FOR COMPLETE SERVICE SATISFACTION

Engineered flow control over many years has established the name HENRY as being synonymous with refrigeration and industrial ammonia applications. Our advanced designs and materials provide rugged, compact, and light-weight construction with maximum strength and full flow capacity.

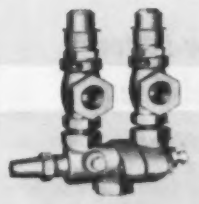
SHUT-OFF VALVES, GLOBE and ANGLE TYPES
Ductile Iron Bodies; Sizes 1/4" thru 1" Screwed Bonnet, 1-1/4" thru 2-1/2" Bolted Bonnet.



SHUT-OFF VALVES, FLANGED GLOBE and ANGLE TYPES
With Forged Steel Companion Flanges: FPT, Socket Weld or Welding Neck; Sizes 1-1/4" thru 6".



CHECK VALVES, PISTON TYPE with or without SEAT LIFT
Two Styles: Screw-end and Flanged; Sizes 1/2" thru 2" FPT; 1-1/4" thru 5" FPT, Socket Weld or Welding Neck.



DUAL RELIEF VALVE ASSEMBLY
Safety Three-Way Valve Prevents Simultaneous Shut-Off of Both Relief Valves. A.S.M.E. Approved.

STRAINERS and SCALE TRAPS
For Complete System and Control Protection—Cleanable Semi-Steel "Y" and Ductile Iron "TEE" Types.

Catalog 203 describes the complete line of Henry Ammonia Valves and Accessories. Write for your copy.

HENRY VALVE COMPANY
Flow Control Devices and Accessories for Refrigeration, Air Conditioning and Industrial Applications
MELROSE PARK, ILLINOIS, U.S.A. CABLE: HEVALCO, MELROSE PARK, ILL.

Meeting Reveals NOFI Developments Designed To Aid Division Members

NEW YORK CITY—The first meeting of the National Oil Fuel Institute's Equipment-Technical Div. revealed new NOFI developments to aid division members.

The meeting, held at the Hotel Commodore here, was called to order by Gabe M. Marin, recently elected vice chairman of the NOFI's Interim Board and Executive Committee. It was attended by 36, including both members of the division and minority members from the other two NOFI divisions.

Walter Blake of Stewart-Warner Corp., Lebanon, Ind., was elected chairman, and C. W. Lang of Sundstrand Hydraulics, Rockford, Ill., vice chairman of the division's Advisory Council. The council is the guiding body of the membership in each NOFI division.

Glenn L. Werly, president of the institute, said that a market research activity would be instituted with special staff within NOFI. Charles Burkhardt, institute vice president, promised that a NOFI director of education would be appointed.

Other matters discussed were steps to be taken to improve manufacturer confidential reporting of shipments, including prompter and more detailed data, as well as activities for more effective representation of oil heat in various government and industry areas, and testing and approval projects for oil heating equipment.

Werly mentioned as NOFI projects which should shape up ahead a Hot Water Heater Test Program, consideration of national advertising, and current thinking about displaying oil heat at the New York 1964 World's Fair.

He also said he was continuing his investigation of competitive builder subsidies and planned, with authorization of the Executive Committee, to determine courses of legal action possible in this connection.

Burkhardt reported on his seven-point NOFI educational program, covering all areas from service personnel through management, and envisioning broad and intensive action to upgrade industry operation and performance, amplified by a new series of training manuals and technical textbooks.

One result will be to improve the situation of the industry now running a shortage of 1,500/1,800 servicemen nationally every year, it was stated.

High priority was given to a campaign to add new manufacturing members to the division. Ralph Hartell, NOFI's communications director, showed the meeting graphic materials which will aid in the new membership campaign.

Afternoon meetings continued with discussion groups divided into the following four sections of the Equipment - Technical Div.: Oil Fired Hot Water Heater Section; Commercial-Industrial Section; Domestic Burner Manufacturing Section; Fuel Oil Handling Equipment Section.

Robertshaw-Fulton Names Snoberger

MILFORD, Conn.—Philip H. Snoberger has been named as sales manager for Robertshaw-Fulton's Bridgeport Thermostat Div. here, it was announced by Edward B. Maire, division general manager.

Snoberger succeeds Carl F. Ahlheim, who recently resigned the post.

The new sales manager is a former assistant director of engineering at Robertshaw-Fulton's Acro Div. in Columbus, Ohio. He has also been associated previously with Penn Controls, the Qualitrol Corp., and most recently with Ranco, Inc.'s research center at Pompano Beach, Fla.

Hodnett Added to Electric Heat Study Committee of NAPC

WASHINGTON, D. C. — The appointment of Lloyd A. Hodnett of Sacramento, Calif., to serve on the newly-formed Electric Heat Study Committee of the National Association of Plumbing Contractors was announced by G. Allen Briggs, president.

Brooks B. Leamy, Easton, Pa., and Robert C. Tonry, Jr., Fairmont, W. Va., were previously appointed to the committee. Louis Bloom, Freeport, N. Y., chairman of the Heating-Cooling Div. of the Technical Dept., also will be chairman of Electric Heat Study Committee.

Purpose of the committee is to advise the NAPC of the stand that should be taken regarding this classification of heating work.

4 Mfrs. Join GAMA, Name Reps

NEW YORK CITY — Four manufacturing firms have been elected to membership in the Gas Appliance Manufacturers Association, according to Harold Massey, managing director.

Cleaver-Brooks Co. of Milwaukee, Van Wert Stoker Mfg. Co., Inc. of Peckville, Pa., Home Furnace Co. of Holland, Mich., and General Products Co., Inc., of Fredericksburg, Va., are the new GAMA members.

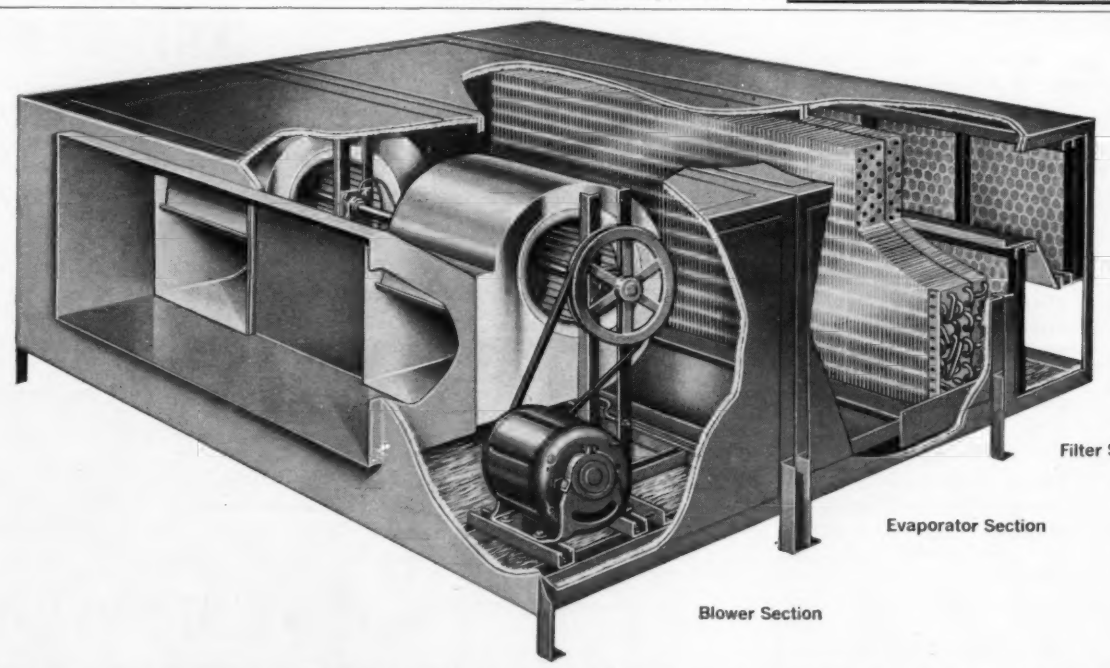
Cleaver-Brooks, which manufactures gas hot water and steam boilers, will be represented at GAMA meetings by William F. Zunker, sales manager. Paul E. Buday, boiler division chief engineer, will serve as alternate delegate.

President William B. Van Wert and Secretary Ellis M. Van Wert will act as delegate and alternate respectively, for the Van Wert company which is developing and will manufacture gas-fired hot water boilers.

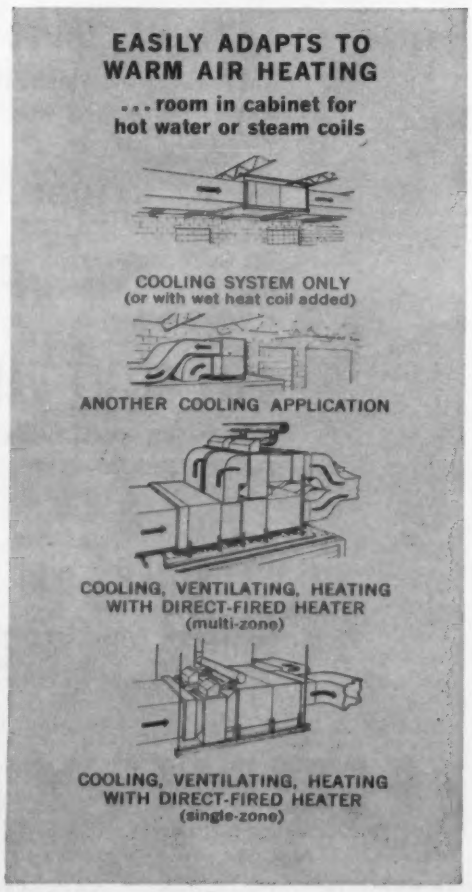
Home Furnace Co., which is developing and will manufacture gas furnaces designed for installation in mobile homes, will be represented at GAMA meetings by James H. Miller. Frank Harbin, Jr., engineering vice president, will serve as alternate.

General Products Co., manufacturer of type "B" double wall gas venting and type "O" all-fuel chimneys, will be represented by its president, H. S. McKann, and J. E. Rowell, director of sales, will act as alternate representative to GAMA.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.



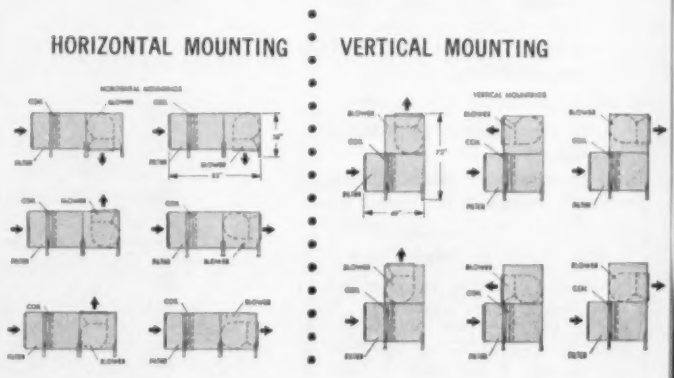
New! Lennox "Job Matched" Air Conditioning Unit


EASILY ADAPTS TO WARM AIR HEATING
... room in cabinet for hot water or steam coils
COOLING SYSTEM ONLY
(or with wet heat coil added)
ANOTHER COOLING APPLICATION
COOLING, VENTILATING, HEATING WITH DIRECT-FIRED HEATER
(multi-zone)
COOLING, VENTILATING, HEATING WITH DIRECT-FIRED HEATER
(single-zone)

...10 to 45 TON CAPACITY

WEATHER-PROOFED AND INSULATED FOR OUTDOOR INSTALLATION

Here's *real* flexibility for commercial application! Three compact sections that fit together for up, down or horizontal air flow . . . for cooling alone, or in combination with heating (either direct-fired or wet system). Evaporator section features unique dual refrigerant circuit that gives latent capacity control without expensive by-pass ducts or complicated mechanisms. Coil face designed for minimum resistance and lower bhp. Outlet of blower section is constructed to permit ducting without additional transitions . . . and all servicing can be done from one side. For complete information, write your nearest Lennox factory or LENNOX, 411 S. 12th St., Marshalltown, Iowa.



Shipment Begins on Order for 210

Mechanical Refrigerator Cars Are 'Literally Cold-Storage Warehouses'

CHICAGO — The first of 210 mechanical refrigerator cars, claimed to be "so efficient they are literally cold-storage warehouses," was delivered recently by General American Transportation Corp.

The cars feature polystyrene foam insulation throughout and propane-fueled engines to drive the cooling units.

Spencer D. Moseley, General American president, said the cars are designed specifically for hauling fresh meat and other packinghouse products.

Moseley called the new model "markedly more economical for packinghouse use than the all-purpose cars." It maintains a temperature from 26 to 70° depending on the product being shipped, he said.

Moseley said the cars' all-panel construction using polystyrene foam insulation is the result of more than 14 years of research and testing.

EXPERIMENTAL CAR BUILT IN 1947

An experimental car using foam plastic was first built by General American in 1947. Thirty-five more were built in 1949 and are still in service.

"The foam's cellular construction reduces heat loss through the car to approximately half that normally found in conventional refrigerator cars," it was stated. "This allows a more economical refrigerating unit to be used."

The cooling unit, built by Thermo King Corp. for General American, was the result of cooperative development over a four-year period. The compact unit can be taken out of the car with a forklift truck and a new one installed in 30 minutes, it is claimed.

ADVANTAGES OF PROPANE

"Use of propane as a fuel has the advantages of ease of starting, economical operations and lower maintenance than other fuels," the announcement said. "In addition, propane is quiet and the exhaust is virtually odorless, important when the cars are standing near residential areas.

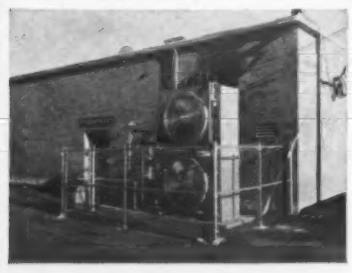
"The propane fuel tank holds enough liquefied peroleum gas for 8 to 12 days' operation, depending on the initial temperature of the load."

The car is 40 ft long and has a capacity of 70,000 lbs. It is designed so all servicing of the cooling unit can be done from the outside without entering the cold compartment.

Lennox air-cooled condensing unit sub-cools refrigerant for greater output

New condensing unit has a Btuh capacity virtually identical to costlier water cooled units of comparable hp. This is because new Lennox coil circuiting sub-cools refrigerant, and increased air volume provides more cooling per watt of power input. Range of 110,000 to 360,000 Btuh at 95° outdoor temperature.

Receiver tank expels any air or non-condensibles from gas line thru purge valve with minimum loss of refrigerant.
Extra large 4-row condenser with fins flat-bonded to seamless copper tubes.
Convenient control box for "stand up" servicing.
Suction cooled compressor with ambient compensated overload protection.
Axial flow fan moves large volume of air at low speed, with minimum power consumption.



Condenser units may be stacked as desired. Completely weatherproofed cabinet construction.

Don't be satisfied with less than

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HEATS, COOLS, TREATS AND MOVES AIR

LENNOX INDUSTRIES INC., EST. 1895 — MARSHALLTOWN, IA.; COLUMBUS, O.; SYRACUSE, N.Y.; DECATUR, GA.; FT. WORTH, TEX.; SALT LAKE CITY, UT.; LOS ANGELES, CALIF. LENNOX INDUSTRIES (CANADA) LTD. — TORONTO, MONTREAL, CALGARY, VANCOUVER, WINNIPEG.

Improved Earnings, New Orders, Backlog Reported by AAF

LOUISVILLE, Ky.—Improvement in earnings, new orders, and backlog of unfilled orders for the first nine months of its fiscal year was reported to the board of directors of American Air Filter Co., Inc.

President W. G. Frank disclosed that new commercial and defense orders totalling $35,552,000 for the period ending July 31, 1961, were more than five million dollars higher than for the same period last year.

Shipments for the nine months period totalled $30,156,000 as compared with $30,044,000, and reflected a six weeks' strike this summer at the firm's plants in Moline and Rock Island, Ill.

Backlog of unfilled orders totalled $20,103,000, as compared with $13,278,000 for 1960 at nine months.

Net earnings for the period were $1.19 per share of common stock, as compared with $1 in 1960.

The directors declared a regular quarterly dividend of 27½ cents per common share, payable Oct. 5 to stock of record at the close of business Sept. 15.

Victory Metal Names Hodak

PLYMOUTH MEETING, Pa. —Victory Metal Mfg. Corp. here, manufacturer of commercial reach-in refrigerators, has appointed Bart N. Hodak as district sales engineer for southern California, southern Nevada, and Arizona.

He was formerly west coast regional manager for G. S. Blakeslee & Co.

John J. Cashin has been appointed district sales engineer for the northern California and northern Nevada area. Cashin was formerly sales engineer for Tara Mfg. Corp.

Walter Stolbach Appointed by Koch

KANSAS CITY, Kan.—Chester K. Litman, president of Koch Refrigerators, Inc., has announced the appointment of Walter Stolbach as Koch representative in New York City.

Stolbach entered the food service equipment industry more than 20 years ago, and has been in the field for all of that time except for three - and - a - half years during World War II. For the past six years he has been a manufacturers' rep.

Detroit Cooling, Heating Group Names Officers

DETROIT—Air Conditioning & Heating Contractors of Metropolitan Detroit have elected John McRae of McRae Heating & Appliances, Ferndale, Mich., as its president for 1961-62.

Other officers for the coming year are George Segal, A. J. Segal & Sons, Inkster, vice president; Val Huavre, Grosse Pointe Heating Co., Grosse Pointe, treasurer; and Carl Beltz, Star Steel Supply Co., Detroit, secretary.

Board of directors include Jack Gorelick, Muscovitz & Pershin Heating Co.; Ted Brehm, T. H. Brehm Co.; Al Keats, King Cole Heating & Cooling; Charles Strand, Jr., C. A. Strand Co.; John Steinke, Steinke & Sons Heating Co.; and Maurice Schakett, Crown Heating & Air Conditioning Co. All are from Detroit except Brehm, whose business is in Oak Park.

Strand is chairman and Brehm secretary of the Better Heating & Cooling Bureau of Detroit. Charles Cross of All Season Heating & Cooling Co., Detroit, was elected to the bureau's board of trustees for two years. Other trustees are McRae and Nathan Strickstein of Auto-Therm Corp., Warren.

Space Needle To Carry Torch for Natural Gas

SEATTLE—A dramatic torch of natural gas as high as a four-story building will top a 550-ft tower which will be the symbol of the Century 21 Exposition in Seattle.

The 40-ft high gas torch on top of the soaring Space Needle will be the focal point of the 1962 fair, lighting up the sky at a height exceeding that of the Washington Monument, according to the American Gas Assn.

It was announced also that the restaurant, which will be located 500 ft up the tower, will be serviced by gas.

The restaurant in the Space Needle will revolve 360° per hour, presenting a panorama of Seattle and Pudget Sound.

The Space Needle will be located near the gas industry building which will show the part the gas transmission and distribution industry will play in the 21st century.

Strouf Heads New Manitowoc Specialty Products Division

MANITOWOC, Wis.—Manitowoc Equipment Works has established a separate Specialty Products Div. with Kenneth R. Strouf as manager, it has been announced.

"We are expanding our production facilities to do subcontracting for other manufacturers throughout the Midwest and to provide for possible expansion in the volume and numbers of products manufactured by Manitowoc," Dedricks said.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

These 2 Krack 15-ton Remote Type Air Cooled Condensers at the Safeway Supermarket in Oklahoma City, condense Freon-12 refrigerant for 15 compressors serving food sales cases, display cases, and walk-in service rooms.

"We chose Krack Air Cooled Condensers for Safeway because of full rated-capacity performance, low cost, and better delivery."

—L. C. Nettleship, Jones-Newby Supply Co., Oklahoma City

Count on KRACK to Deliver RATED CAPACITIES

YOU ENJOY THESE ADVANTAGES:

Equipment matches the job . . . You can be *sure* about actual performance. You don't have to "play it safe" by specifying more costly, "oversize" equipment for a job when it is not needed.

Gain advantages of lower bidding . . . By saving cost of specifying "oversize" equipment to compensate for uncertain performance, you can bid lower and win more jobs.

Save installation and maintenance headaches . . . With Krack job-rated equipment, installations go more smoothly. Costly service calls for repairs and adjustments are rare. A good way to retain priceless customer good will.

No service calls with Krack Air Cooled Condensers—Eliminate maintenance problems . . . forget about down time for draining, scale removal and periodic overhauls. No water is required. Destructive corrosive action from water is gone and so are costly callbacks.

KRACK REFRIGERATION APPLIANCES, INC.

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0230

Editorial

Rich Man, Poor Man, Beggar Man, Thief . . .

Everybody Reads A Newspaper

Gentlemen:

Here is my renewal to ACH&R NEWS. I have not sent it in earlier because I had my doubts about renewing it.

Your magazine, I am sorry to say, is no longer of much interest to the service end of the industry, but possibly I expect too much. There are too few Paul Reeds in this world, and I know the bulk of your revenue is from advertising and you must devote much of your space to things of interest to them.

Please understand that I am not criticizing you or your paper, only stating one man's viewpoint.

The few Tech Center articles which you do carry are good—only too few and too brief.

Yours,
GEORGE L. THOMPSON
Wheeler, Oregon

* * *

Dear Mr. Thompson:

Thank you for your subscription; thank you also for your comments which reminded us that it is occasionally necessary to review for our readers the role of AIR CONDITIONING, HEATING & REFRIGERATION NEWS.

First, to answer your doubts: over a year's time, the NEWS publishes more column inches of service and installation information than any other industry publication. And this measurable comparison applies even to those magazines devoted exclusively to service.

Manufacturers, large and small, buy NEWS subscriptions for their service managers and—in many instances—for every one of their servicemen.

But the NEWS is a *newspaper*. Not only does the service manager read it every week, but so does the sales manager, the company president, the advertising executive, the personnel manager. They read it for news and information of what competitors are doing, new promotional schemes, labor news, introduction of new lines. Wholesalers, distributors, engineers look each week for information of prime interest to them.

And it is all there.

Because it is a newspaper, the NEWS is most effectively read as you read your local daily. In your hometown newspaper, you may scan the front page, take a look at the editorial, read the sports section, peruse a favorite column; you pass over advice to the lovelorn, stories for the kiddies, beauty hints. Your wife ignores the sports pages.

You both get your money's worth.

Could be that some issues will take but a moment or two of your time. Others you will read carefully and profitably. The Sept. 4 issue devoted to modern methods of installation and service was right down your alley, we'd bet, Mr. Thompson.

And naturally, the editors can't predict the news. New products, association meetings, merchandising ideas occur irregularly and unpredictably, but when they happen, they're in the NEWS quickly—52 times a year, not twelve.

Should you, Mr. Thompson, stay in service work, you will get more than your money's worth. Should you, like so many of your counterparts, move on to a dealership or other merchandising business, you may be writing us a few years from now complaining that we are devoting *too much space to service* and not enough to business procedures! This, too, has happened to us.

One last point: advertisers do not pay good money to appear in the NEWS because they like us. It is you, the serviceman, the dealer, the wholesaler, that the advertiser is attempting to reach and influence. He believes he can influence you because you are a reader of the NEWS.

We may like him, but he receives his actual reward for advertising by the very fact of making you aware of his existence, by giving you his message. Any perusal of our articles and editorials will show that advertising manufacturers are treated with the same impartial objectivity as are other groups in the heating-cooling industry.

Remember, there is something for everyone in a newspaper, and AIR CONDITIONING, HEATING & REFRIGERATION NEWS is a newspaper, the only one serving the heating-cooling industry.

The man who is anybody and who does anything is surely going to be criticized, vilified, and misunderstood. This is part of the penalty for greatness, and every great man understands it; and understands, too, that it is no proof of greatness. The final proof of greatness lies in being able to endure contumely without resentment.—*Elbert Hubbard.*

THE LUMBER RETAILER TRIED TO ADVISE ELMO HOW TO CARRY OUT HIS FANCY BASEMENT PROJECT···
LOOK, ELMO··· LET ME GIVE YOU A FEW TIPS ON HOW TO DO THE JOB···
NAW!! I WANT TO DO IT ALL MYSELF··· YOU JUST SELL ME THE LUMBER!
PLASTICS
PLASTICS
THANK AND A TIP OF THE HAT LO HAT TO C.H. SCHUELER 316 RIEBELING ST., COLUMBIA, ILL.
WELL, ELMO TACKLED THE JOB ALL BY HIMSELF··· AND NOW COMES IT THE LUMBER DEALER'S DAY OFF···
I WAS TAKIN' A NAP!
IT'S ELMO DUNKHORST, DEAR···
YEAH··· I WAS WONDERING IF YOU'D COME OVER AND SHOW ME WHAT I DID WRONG··· THE WOOD DON'T FIT IN THE CORNERS···
8-5
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They'll Do It Every Time

by Jimmy Hatlo

OFF THE CHEST

EXPLOSION AND DEGRADATION

Sun Oil Co.
Philadelphia

Editor:

Relative to the discussion of the danger of explosion in air-cycle testing of compressors, there is another angle other than possible explosion which bears careful consideration.

Oil mixed intimately with air at 700°-1,000°F (the temperature generated at 15-to-1 compression ratio) is an ideal system for oxidation. Even though an explosion may not result, the oil is without doubt degraded severly, even at lower temperatures.

If the degraded oil remains in the refrigeration compressor on final assembly, it will almost certainly promote troubles such as valve sticking, carbonization, capillary plugging. The chances are extremely good that these conditions would lead to service difficulties and customer complaints.

H. E. TIFFANY

AN INVENTION FROM SWEDEN

Stockholm, Sweden

Editor:

With reference to articles of Frank J. Versagi in NEWS of April 4, 1960, p. 40 about heat pump defrost and Sept. 21, 1959, p. 40, where he discusses "How near are we to a universal model which will perform satisfactorily and economically in all climates," I beg to tell you that we here have hit upon a new, simple and cheap method to eliminate the frosting troubles in connection with air-to-air units. According to the said articles the solution of this problem is one of the most actual one in heat pumps-job.

In order to hear if there may be a possibility to introduce such a *frostfree air-to-air unit* in areas with climate to about -15° during the winter we wish to get in communication with a firm, which is interested in manufacturing and selling air-to-air heat pump units in climates below the freezing point.

Are you, sir, able to tell us such a firm?

MARTEN BLOMQVIST

A REQUEST FROM INDIA

Bombay, India

Editor:

I am one of the regular readers of the AIR CONDITIONING, HEATING & REFRIGERATION NEWS. The articles discussed by you have been very interesting, and have proved extremely useful to improve my knowledge.

I have noticed that there are many facilities in the States for technical personnel to improve their knowledge. For instance, U. S. manufacturers are conducting meetings to familiarize their products, design, advantages, and disadvantages, etc. Also RSES conducts an active educational enterprise.

Whenever I read the articles on such chapters, seminars, or conferences, I rejoice, and at the same time feel extremely sorry for our state here.

At present I am engaged in a firm dealing in servicing, maintaining, and overhauling of air conditioning and refrigeration equipment. Unfortunately this company is not having any foreign agency or representation.

Having a keen desire to go to the States, which is the most advanced country in our trade and work, for some time to build my career, I applied directly to some of the U. S. firms. But all the firms to which I applied regretted saying that I should be sponsored by their representatives in India.

Through your good offices I hope to get an opportunity to fulfill my worthy ambition.

I shall be pleased to work in any capacity, and I have no hesitation in assuring you that I will carry out the work.

H. S. RAGHOTTAM

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From the Files of the News

25 years ago . . .

It was announced that "Air Conditioning Made Easy," a manual and textbook on air conditioning engineering practice, would soon appear in serial form in the NEWS. . . . Air conditioning, which regulates humidity, temperature, and air drafts, is being used in place of baby incubators in the care of premature babies, and is credited with 26% saving in lives by the Harvard professor conducting the experiment.

During July 88 homes were air conditioned in St. Louis, to set a new mark in residential installations for that length of time. . . . Air conditioning installations were reported from 47 cities; information was supplied by the local utilities and covered installations made prior to 1935, those made during 1935, those made the first seven months in 1936, and total installations to date.

Frick air conditioning has been installed in a walnut warehouse with capacity to hold 17 million pounds of walnuts; reports indicate the installation successful in one of the largest warehouses in the world, although there were initial doubts that any air conditioning system could adequately serve the 700 by 400 by 30 ft area.

10 years ago . . .

The NEWS "celebrated" its Silver Anniversary with a 112-page issue filled with 25 years of industry highlights, "Dope" highlights, and NEWS' service highlights to the industry. Excerpts of "excerpts" follow. . . .

Editorial, Sept. 11, 1926: Although manufacturers of refrigerators are puzzled with the term "electric" refrigerator, we consider it "electric" because it relies on an electric motor, electric wiring, and electric current. . . . General Electric entered the electric refrigerator field in 1927 with its "Monitor Top" hermetic unit.

Advertising sentimentalists—Frigidaire, Acme, Tyler, Westinghouse, Ranco, Revco, du Pont, Worthington, General Electric, Kelvinator, Tecumseh, Larkin, Kramer Trenton, Chrysler, Frick, Dole, Norge, and Brunner—reminisced about their history and their "firsts" in the industry, too.

In 1931 Willis Carrier wrote about the history of air conditioning from 1902. . . . In 1934 the NEWS published air conditioning specifications for the first time.

In 1935 York introduced an air-cooled unit, requiring no water connections. . . . Madison Square Garden is air conditioned in 1937. . . . In 1940 a Miami supermarket was air conditioned, and a "trend" was predicted.

"Steel companies will be urged to air condition," "Time" magazine reported in 1942, because air treatment speeds up production of many vital war materials. . . . In 1942 a Westinghouse construction expert described the "ideal war plant" as egg-shaped, air-cooled, bacteria-proof, and a black-out, bomb-resistant, windowless building.

War uses for refrigeration machines in 1942 included: chilling airplane instruments, freezing pitch or optical lenses, and freezing high precision gauges. . . . Large air conditioning units were contributed to war plants by 50 civilian firms in 1943.

Air conditioning will be practical for $6,000 homes, builders were told in 1945. . . . The National Association of Refrigeration Contractors was formed in 1945.

Wholesaler's Catalog Organized So Competitive Items Can Be Compared

NEW YORK CITY—A master catalog so organized that competitive equipment is blended together and laid out side by side for comparison purposes has been published by Paramount Electrical Supply Co. here.

The brain child of Paramount President Harry Ralston and Vice President Herbert Hammersley, the 736-page volume is claimed to be the first of its kind in the air conditioning and refrigeration industry.

Ralston said the work of compilation took five years of concentrated after-hours effort.

"Our catalog was designed with the idea of completeness, choice, and comparative facility," Donald L. Ralston said, "so it can be of maximum value to its user, while taking a minimum of space.

"To this end, we have added several pages of engineering and technical data as well as additional descriptive literature."

The catalog is divided into 30 sections. Products in each section are those which tend to be together in the air conditioning and refrigeration system.

For instance, Section A covers tubing and pipe, Section B fittings, Section C hand valves, Section D high side equipment and accessories, and Section E low side equipment.

To make it easy to find a particular product, pages in each section are numbered separately. Every item on the page is also numbered, with numbers on each page starting with 1. Thus, the Paramount catalog number for any item gives section letter first, page number second, and item number third. For example, the catalog number for a Henry automatic relief valve with ¼-in. MPT and ⅜-in. flare is J67-8 (Section J, page 67, item 8).

In the front of the book is a 34-page cross index.

Sectional listings also contain an illustration of almost every product type listed. No prices are included, but price sheets will be issued about twice a year, Ralston said.

Because the catalog is bound in a hard cover for durability and cost about $15 each to print, its circulation is limited to contractual, industrial, and institutional customers in this country and abroad, Ralston said.

Copies will be mailed only upon request and subsequent authorization by Paramount.

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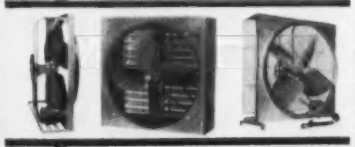
$ WINDMAKER $

COMMERCIAL-INDUSTRIAL-INSTITUTIONAL FANS . . .

A complete line at money-making prices

- Belt and Direct-Drive Fans—10" to 60"
- Spot Coolers
- Portable Blowers
- Roof Exhausters
- Automatic Shutters
- Fan Guards, Motors, Time Switches, etc.



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HI PERFORMANCE EFFICIENCY

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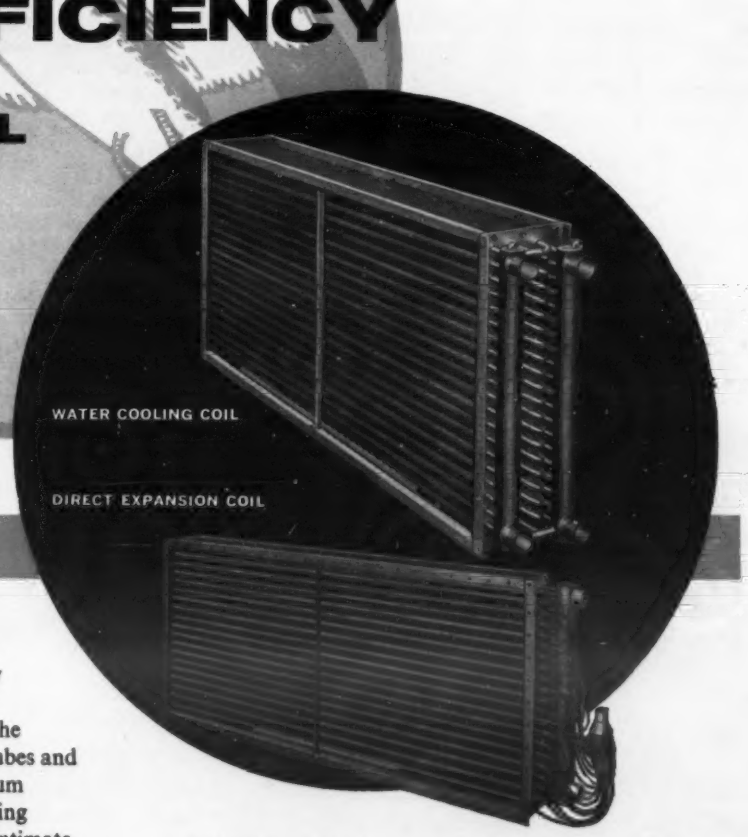


McQuay Means Quality

The new McQuay Type "5" coil design offers you a new high in fin efficiency by attaining the highest heat transfer rate possible without excessive air friction. The combination of equilaterally staggered tubes and modified rippled fins produces a maximum of air turbulence to interrupt the insulating boundary layer film and still retain the intimate and prolonged contact between air and the heat exchanger surface.

Each Type "5" coil features practically an unlimited flexibility in selection of coils to more accurately meet load requirements. Standard coils are furnished with copper headers and flow-controlled circuiting to assure the turbulent fluid flow necessary without using restrictive internal devices.

For any coil requirement, look to McQuay. Call your local McQuay representative or write to McQuay Inc., 1607 Broadway N. E., Minneapolis 13, Minnesota.

THE NATION'S LARGEST COIL MANUFACTURER

SELECT McQUAY STANDARD COILS FROM ANY COMBINATION OF THE FOLLOWING:

Single Serpentine . . . . . One to 14 fins per inch
Half Serpentine . . . . . From 6" through 36" high face
Double Serpentine. . . From 6" through 144" nominal tube length

ALSO AVAILABLE IN SPECIAL CIRCUITS, FIN SPACINGS, SIZES AND MATERIALS

McQuay INC.

AIR CONDITIONING • HEATING • REFRIGERATION

Helpful Hints on Brazing Copper Tubing

Table 1—Melting Ranges of Brazing Filler Metals

Filler Metal	Melting Point °F.	Free Flowing at °F.	Nominal Composition — Per Cent — Silver	Copper	Zinc	Cadmium	Phosphorus
BAgla	1160	1175	50	15½	16½	18	....
BAg 2	1125	1295	35	26	21	18	....
BAg 6	1270	1425	50	34	16	....	....
BCuP 3	1190	1480	5½	88¼	....	....	6¼
BCuP 5	1185	1500	15	80	....	....	5

Table 2—Copper Water Tube Internal Working Pressures at Joints (p.s.i.)

Filler Metal Used In Joining	Maximum Service Temperature °F.	Noncorrosive Liquids and Gases—Copper Water Tube (nominal sizes) ¼ to 1 Incl.	1¼ to 2 Incl.	2½ to 4 Incl.	5 to 8 Incl.	10 to 12 Incl.	Saturated Steam All
50-50	100	200	175	150	130	100	....
Tin-Lead*	150	150	125	100	90	70	....
Solder	200	100	90	75	70	50	....
	250	85	75	50	50	40	15†
95-5	100	500	400	300	150	150	....
Tin-Antimony	150	400	350	275	150	150	....
Solder	200	300	250	200	150	140	....
	250	200	175	150	140	110	15†
Brazing Alloys	250§	300	210	170	150	150	....
(Melting at or above 1,000° F.)	350	270	190	150	150	150	120‡

SOURCE: Based on data in the National Bureau of Standards publications, Building Materials and Structures Reports BMS 58 and BMS 83.

*ASTM B32, Alloy Grade 50A.

†This pressure is determined by the temperature of saturated steam at 15 lb. pressure or 250° F.

‡This pressure is determined by the temperature of saturated steam at 120 lb. pressure or 350° F.

§For service temperatures lower than 250° F. the solders as above may be used.

Table 3—Approximate Consumption of Brazing Alloy per Joint, In Linear Inches

Copper Water Tube Sizes In Inches	1/16 In Wire*	3/32 In Wire*	.050 x ⅛ In Strip*
¼	¾	....	....
⅜	1	....	....
½	1½	¾	⅞
¾	2	1	1⅛
1	3	1½	1⅝
1¼	4	2	2⅛
1½	....	2½	2⅝
2	....	3¾	4
2½	....	6	7
3	....	10	11
3½	....	12	13
4	....	14	15½
5	....	16½	18
6	....	21	23

Other sizes are available.

Table 4—Brazing Tip Sizes

Copper Water Tube Size In Inches	Torch Tip Drill Size No.	For Estimating Purposes — Acetylene Consumption Cu. Ft./Hr.	Oxygen Pressure (Approx.) p.s.i.	Acetylene Pressure (Approx.) p.s.i.
¼	54	15.9	4	4
⅜	54	15.9	4	4
½	51	24.8	5	5
¾	51	24.8	5	5
1	48	31.6	6	6
1¼	48	31.6	6	6
1½	44	38.7	7	7
2	40	60.0	7	7
2½	40	60.0	7	7
3	35	70.0	7½	7½
3½	35	70.0	7½	7½
4	30	88.5	9	9
5	30	88.5	9	9
6	30	88.5	9	9

By Arthur I. Heim, Research Director, Copper & Brass Research Association (CABRA)

At operating temperatures up to 250° F., strong and pressure-tight joints can be made adequately in copper tube installations with "soft" solders. At higher operating temperatures, it becomes necessary to use brazing filler metals (sometimes referred to as hard or silver solders) that require joint temperatures of 1,100° F. and higher before they will flow into the joint.

Brazing of copper tube can be done with either silver-bearing brazing alloys (BAg) or copper-phosphorous (BCuP) alloys. Of the two, silver brazing alloys are more generally used because of their lower melting points.

Each brazing alloy begins to melt at a particular temperature, known as the solidus. But it does not become completely liquid and flow freely until a higher temperature, known as the liquidus, is reached. The spread between these two temperatures is known as the melting range.

In selection of a brazing alloy it is important to give consideration to the melting ranges of the alloys. The melting range, particularly its upper limit or liquidus, is a determining factor in torch time required to complete a joint.

Brazing is not possible until the joint is brought up to the free-flowing temperature of the brazing filled metal. Thus, this temperature is an important cost factor. It also determines how easily the job can be done. Table 1 shows melting ranges for typical brazing alloys used for copper tube.

HERE'S WHAT MAKES A GOOD BRAZED JOINT

A good brazed joint depends on penetration of the brazing filled alloy into the space between the tube and the socket of the fitting. The brazing alloy is drawn into this space by capillary attraction. The effectiveness of capillary action depends on proper clearances between tube and fitting. While full penetration of the joint is desirable, it is not absolutely essential because of the high strength of the brazing alloys.

As a rule of thumb, if there is uniform penetration all around the fitting to a depth at least three times the wall thickness of the tube, the joint will be as strong as the tube itself. A 45° fillet around the joint provides visual assurance of tightness. However, if the necessary penetration of brazing alloy has been attained, a fillet will not add materially to the strength of the joint.

For operating temperatures up to 250° F., tin-antimony solders and tin-lead solders are commonly used with copper tube and solder-type fittings. When brazed joints are used in this temperature range, working pressure ratings will be as high as or higher than ratings for joints made with tin-antimony solder.

For temperatures higher than 250° F. the only satisfactory capillary joints are those that are brazed. Brazed joints can be used for any service temperature up to that at which the copper or copper alloy tube may be used. Table 2 indicates maximum internal working pressures for brazed joints at 250° and 350° F.

STEP-BY-STEP PROCEDURES

Preliminary steps in brazing a joint are identical to those employed in soldering. Tube length must be measured accurately—to fill the sockets of the fittings completely. Tube-ends are reamed or filed to remove burrs and slivers. Then tube-ends and fitting sockets must be cleaned mechanically, preferably with fine sand cloth. Fine emery cloth may be used, but it should be used with a very light touch. This cleaning is highly important.

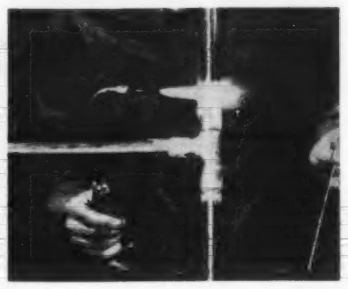
Flux is applied to the tube-end and fitting socket with a brush. After the joint is assembled, additional flux is applied liberally at the point where the tube enters the fitting socket. Covering tube and fitting with flux in

the area to be heated will reduce discoloration resulting from heating. In the choice of a flux, the recommendations of the producer of the brazing filler metal should be followed.

When brazing with copper-phosphorous filler metals and using wrought copper fittings (not with brass fittings), no flux is needed. However, use of flux is advantageous even with these filler metals.

In assembly of the joint, the fluxed tube is inserted into the fitting socket up to the stop. The assembly must be supported firmly, for proper alignment of tube and socket.

An oxy-acetylene flame is the preferred method of applying heat — although propane and other gases can be used effectively for small tube sizes. The oxy-acetylene flame should be slightly reducing. There should be a slight feather on the inner blue cone.

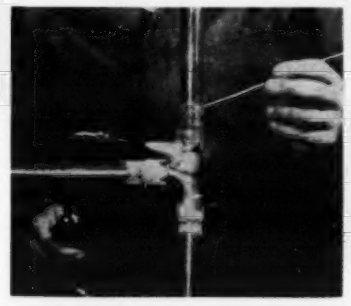


Heating begins on the tube, about an inch from the edge of the fitting. The flame is swept around the circumference of the tube in short strokes, up and down, at right angles to the run of the tube.

The flame must be kept in constant motion around the tube, for if it is held on one point it might burn through the tube.

Flux action guides the operator on heating time. The flux on the tube-end starts to bubble and boil—but heating of the tube should continue until the flux quiets down and becomes as transparent as water.

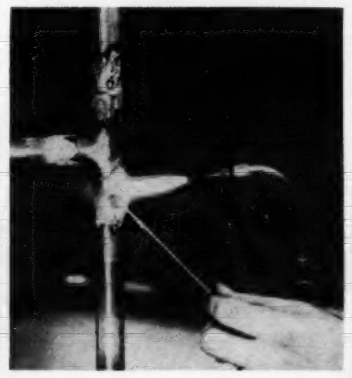
Then the flame is moved to the fitting. It is played repeatedly on the area near the base of the socket. Swept from fitting to tube and back again, the action of the flame continues until flux on the fitting stops bubbling and becomes transparent.



Thereafter, flame motion is continued back and forth along the axis of the joint, and particularly toward the area at the base of the fitting socket. At this point the filler metal, in the form of wire or rod, is applied to the joint at the edge of the fitting where the tube enters. The flame should not be played on the filler metal as it is being applied to the joint. Rather, the tube and fitting must supply the heat to melt the alloy.

Meanwhile, the operator continues to play the flame on and around the joint. Brazing does not occur, however, until the temperature of the joint reaches the free-flowing temperature of the alloy. At that time, capillary action draws the filler metal into the joint.

The action continues until the capillary space is apparently



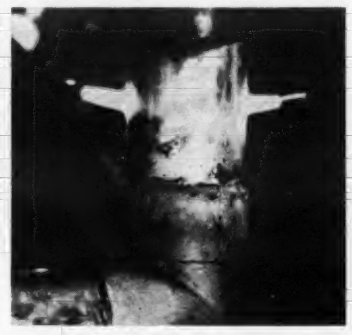
filled, at which time a continuous fillet of alloy should be formed around the edge of the fitting. The joint is then complete, and heating and feeding of alloy are discontinued.

The following temperature color guide will be helpful in approximating temperatures of copper being heated:

First visible red	900° F.
Dull red	1,200° F.
Cherry red	1,400° F.
Bright cherry red	1,600° F.

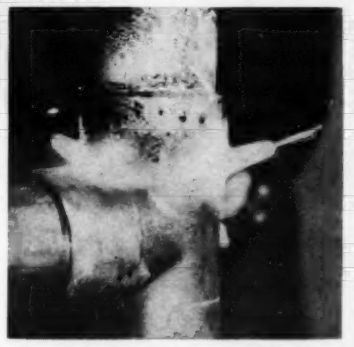
HOW TO BRAZE LARGE JOINTS

In 1-in. tube and larger, the operator may find difficulty in bringing the entire joint to brazing temperature. For larger joints the use of a double-tip



torch will maintain proper temperatures over a larger area.

It is also practicable in such cases to heat and braze a portion of the joint at a time. This is done by feeding the alloy into that portion of the joint that is brought to temperature—after which the torch is moved around to the next area—and so on. The entire joint is heated and brazed in stages, taking care to overlap the operation. Here, too, the operator should avoid concentrating the flame on too small an area, lest it burn through.



In a large horizontal joint that is to be brazed in stages, it is preferable for the operator to start the application of alloy at the top of the joint edge. Following that, alloy is applied at side edges; and finally at the bottom edge.

In a large vertical joint it is not important where the operator starts to fill. But where the socket opening points downward, if the tube is overheated, the alloy will run down the tube rather than being drawn into the joint.

When the filler metal has set, the flux remaining on and around the joint can be removed with a wet brush or swab. Excess flux must be removed before pressure testing and inspection. Wrought fittings may be chilled quickly if desired. Cast fittings must be permitted to cool slowly before applying the wet brush or swab. Otherwise, they may crack.

HELPFUL HINTS ON BRAZING PROBLEMS

When the brazing alloy fails to flow, or shows a tendency to ball-up, either oxidation of the metal surfaces or too low a working temperature is responsible.

When work starts to oxidize during heating, flux is either too thin in consistency or not enough has been used.

When brazing alloy fails to enter the joint and tends to flow over the outside of either member of the joint, either this member is overheated or the other member is underheated, or both factors may be involved.

GENERAL ELECTRIC NOW OFFERS SEVEN DIFFERENT SIZES OF CONTACTORS AND STARTERS...RATED TO 600 VOLTS

For Air Conditioning and Refrigeration. General Electric's new 20-, 25-, and 75-amp contactors and starters combine with present 30-, 40-, 50-, and 60-amp units to bring you a complete line of economical controls for incorporation into all your residential, commercial, and industrial air conditioning and refrigeration equipment.

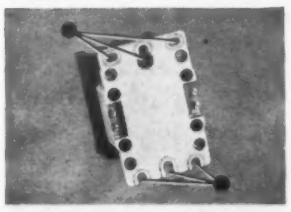
For Resistance Heating. These same General Electric controls have special current ratings for resistance heating loads—each will carry its maximum amp rating at all voltages, allowing you greater performance from the contactors and starters.

And with all seven ratings, you get a complete line of easy-to-install, compact controls with lower power requirements . . . yet fully rated up to 600 volts. Straight-through wiring is standard on all ratings.

For the complete story on this full line of air conditioning, refrigeration, and heating controls, contact your local G-E sales engineer today. Or write to Section 811-27, General Electric Co., Schenectady, New York for publication GEA-7316A.

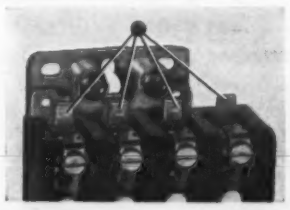
Progress Is Our Most Important Product

GENERAL ELECTRIC



Durable Cast Aluminum Baseplate on 20- through 40-amp ratings has keyhole slot and two holes at top and three slots at bottom to provide interchangeable mounting.

Pressure-type Terminals on 30- through 75-amp sizes speed hook-up of line and load terminals; screw-type on 20- and 25-amp ratings accept spade and ring terminals or bare wire.



Accessory Connections. Optional quick-connect single- and double-blade terminals on 30- and 40-amp designs permit accessory connections such as condenser fan motors, control transformers, and coils.

Ceiling Unit Cooler Has Compact Design

● A compact ceiling unit cooler has been introduced by Kohlenberger Corp., Dept. AH&RN, 1600 Commonwealth, Fullerton, Calif.

The compact design of the KDF "Duoflo" is said to be suited for meat-cutting rooms, milk coolers, and other applications where space is at a premium. According to the company, the heavy-duty fin coil is applicable for use with either ammonia or brine refrigerant, and the insulating pan eliminates troublesome condensation.

Other engineering features include an electrically-welded coil. The fans are direct driven on resilient-mounted ⅓-hp motors.

10-Ton Condensing Unit Has Capacity Control

● A new 10-ton condensing unit introduced by Carrier Air Conditioning Co., Dept. AH&RN, Syracuse 1, N. Y., has capacity control as standard equipment and is especially designed for rooftop installation.

Weighing 870 lbs, the unit stands 20⅞ in. high without legs, which adjust to 12 or 18-in. heights. The vertical discharge propeller type fans make possible the low silhouette.

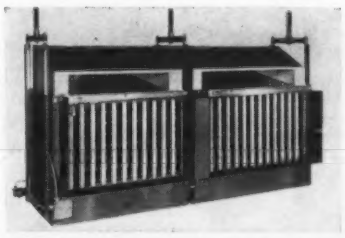
"The controls automatically unload two cylinders to give two-thirds capacity, delivering efficient cooling and humidity control under light loads," it was stated. "The Carrier 'Time Guard' control circuit prevents rapid cycling of the compressor and reduces starting load on the electric system.

"The zinc coated steel has a baked green enamel finish. The compressor and controls are in a separate compartment so that the unit can be serviced in operation without danger from the fans, which are also shielded by closely spaced wire guards."

Duct Furnace Approved For Use with Cooling

● Gas duct furnaces with AGA approval for installation downstream of refrigeration coils have been introduced by Hastings Air Control, Inc., Dept. AH&RN, 3215 Leavenworth St., Omaha 5, Neb.

"These units have low air pressure drop and are designed for use with air conditioning systems



where by-pass ducts would be too bulky or expensive," the company said.

"Moisture which forms inside the heat exchanger tubes in summer is diverted by a stainless steel condensate shield away from the pilot, thermocouple and ignition slots, and into an aluminized steel bottom pan with threaded drain connection. Duct furnaces with this same condensate shield assembly may also be ordered with modulating gas valves for 'make-up air' installations."

Hastings duct furnaces are available in seven sizes from 75,000 to 300,000 Btuh, and may be close-coupled to any total capacity.

Unit Directs Stream Of Air Over Doorway

● An air isolation curtain called "Miniveil" has been developed by Dyfoam Corp., Dept. AH&RN, 220 Cherry St., New Castle, Pa.

The unit reportedly permits cold storage room doors "to remain open for prolonged periods, allowing traffic to move freely, with a negligible rise in coldroom temperature. The unit eliminates cold air escape and prevents warm air from entering by directly a stream of air over the face of an open doorway. The air steam is of sufficient velocity to entrap the air in its immediate vicinity."

Miniveil units also repel insects, dust, and odors, according to the company.

Constructed of aluminum, Miniveil is lightweight and corrosion-resistant. The 6-ft model weighs 80 lbs and can be installed by two men in less than four hours, the company said.

Acme ... the **practical** approach to air conditioning

A WARD WINNER

Completely, handsomely modern inside and out, with every up-to-the-minute service and facility imaginable, to make shopping a pleasant, thoroughly enjoyable experience . . . a "winner" in every respect. That's the word from Tucson on Montgomery-Ward's latest "blue ribbon" entry in the department store field.

Word also has it that this "win" was PACEd by Acme, and it's true. Every PACE in the store . . . six 40-ton Packaged Air Conditioners . . . is an Acme unit. Now, 240 tons of air conditioning represents a *substantial* investment, as you know . . . an investment made only after the most careful analysis of the relative merits of the equipment available. Here, for your own analysis, are the merits of Acme's PACE Packaged Air Conditioner line . . .

* Multi-circuit design, exclusive sequential unloading, reduced horsepower requirements result in lower operating costs . . . longer life for compressors, motors, starters, controls . . . up to 35% in motor horsepower savings. PACE's will pay for themselves *faster than any other packaged unit on the market!*
* Compact design saves valuable floor space . . . up to 30% over competitive units in some cases.
* Lower silhouette saves premium headroom . . . in some capacity ranges as much as 20%.
* Efficiently reduced air circulation requirements cut duct and grille work costs.
* Complete factory packaging . . . no on-the-job assembling slashes installation costs.
* Multiple circuits eliminate complete system shutdown for service . . . no high cost emergency service.

All this and quieter operation, too! Small wonder that Montgomery-Ward invested in Acme. Why not "go with a winner"? Go Acme.

Acme INDUSTRIES, INC.
JACKSON, MICHIGAN • GREENVILLE, ALABAMA
MANUFACTURERS OF QUALITY AIR CONDITIONING AND REFRIGERATION EQUIPMENT SINCE 1919

Packaged Chillers 1½-250 tons
Remote Room Conditioners 200-600 cfm
Cooling Towers 3-120 tons
Packaged Air Conditioners 3-60 tons
Evaporative Condensers 10-110 tons
Air Handlers 665-47,000 cfm

Recording Thermometer Checks Air In Transit

● A new recording thermometer offers shippers and carriers of perishables accurate, hour-by-hour written records of temperatures in transit, according to Ryan Recording Thermometer Co., Dept. AH&RN, 851 Poplar Place South, Seattle 44, Wash.

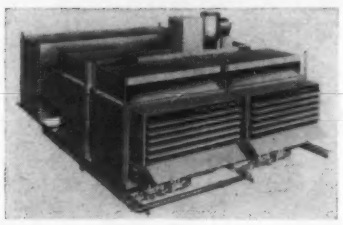
The Model D instrument gives faster response to the temperature fluctuations and achieves improved accuracy in recording, the company said. The sturdy, portable recording thermometer offers an extended range from -20° to 100°F.

The new unit is more streamlined and compact than earlier Ryan models and some 30% smaller in size, measuring 3 in. in diameter and 5 in. in length. Special custom-made works of the instrument are built to withstand shock and vibration encountered in transit, it was stated.

The new recording thermometer is self-contained, spring wound, has a short arm inkless stylus-type pen, and employs a strip chart recording arrangement. A continuous hour-by-hour record of temperatures can be made for periods of 15 or 30 days. A convenient metal bracket accompanies each unit, making it possible to place the recording thermometer at any location.

"For the first time," it was noted, "Ryan is offering recording thermometer units for purchase as well as on the conventional rental by the trip, month, or on a long term basis."

Heater Assembly Provides for Multi-Use



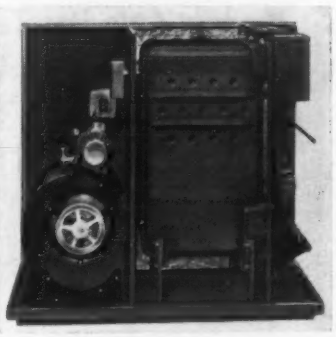
● Reznor Mfg. Co., Dept. AH&RN, Mercer, Pa., has introduced a new heater assembly which makes possible virtually limitless utilization of its direct-fired gas equipment in heating and cooling, partial fresh air and total make-up air, processing, and similar systems.

Designated the PAK Series, the unit consists of a factory assembly of from one to four Reznor DS Series duct furnaces together with complementary packaged blowers, mechanical flue exhauster, and control system to provide a complete packaged unit.

Four models are available, ranging in capacity from 200,000 Btu to 1,400,000 Btu input, and assembled in either push-through or pull-through arrangement.

The particular DS Series duct furnace used in each PAK model is flex-rated with a range between 200,000 Btu and 350,000 Btu input, with adjustment at the regulator providing the exact capacity required.

In push-through PAK Series arrangements, blower motors with frame size up to 215 are enclosed within standard blower cabinets. Pull-through arrangements, however, usually require a blower cabinet with externally-mounted motor and blower shaft bearings unless the temperature of air entering the blower cabinet does not exceed 140°F as in most make-up air and fresh air systems.



Luxaire Bows 5 Winter Air Conditioners

● Five new models of "Luxaire" Series SA gas-fired basement-type winter air conditioners have been announced by The C. A. Olsen Mfg. Co., Dept. AH&RN, Elyria, Ohio.

Ranging in capacity from 100,000 to 200,000 Btuh input in steps of 25,000 Btuh, the units are shipped completely assembled and wired. The heavy gauge heat exchanger is precision die-formed from 16 gauge steel and is end-welded.

A modern cabinet completely conceals the gas manifold, burners, and controls.

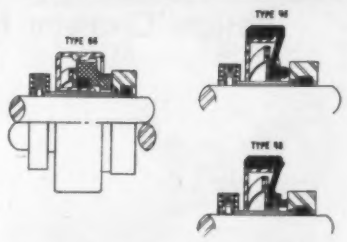
"Extra-capacity blowers afford quiet, even air circulation for heating and facilitate later addition of summer air conditioning cooling coils at minimum cost."

Shaft Seal, Mating Ring Made as One Unit

● A new "family" of "unitized" shaft seals in the low to medium price range has been introduced by Gits Bros. Mfg. Co., Dept. AH&RN, 1866 S. Kilbourn Ave., Chicago 23, Ill.

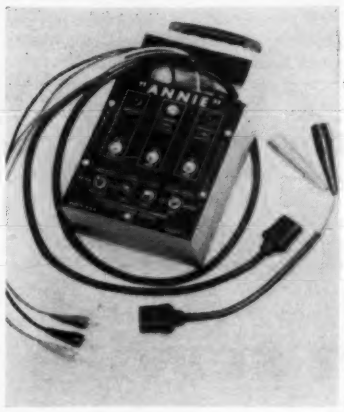
The three types of seals in this family all contain both stationary seal face and positive-drive mating ring factory assembled as one unit.

"Extra economy results from



this 'cartridge construction' — in part because both seal and mating ring are purchased at one time from one source," it was stated. "Simple, hand installation of some models produces still more economies. These particular unit seals may also be disassembled and the seal faces reconditioned."

Gits Seal Type 66 is available for pressures as high as 250 psi, and will take speeds up to 10,000 fpm and temperatures from -65°F to 400°, the company said. Gits Seal Types 46 and 48 are lower in cost and have these recommended operating ranges: pressures to 10 psi, speeds to 3,500 fpm, and temperatures from -20° to 250°.



Hermetic Analyzer Has 3 Test Circuits

● Designed specifically for air conditioning, heating, and refrigeration service technicians, a new hermetic analyzer—model A-2—diagnoses trouble accurately and quickly in hermetically-sealed refrigeration units up to 3-5 hp, 110-220 volts a-c, according to Mechanical Refrigeration Enterprises, Dept. AH&RN, P. O. Box 122, North Hollywood, Calif.

Capacitor range is 75-380 mfd at 220 volts a-c.

The test instrument can be left on the job as auxiliary capacitor.

Model A-2 incorporates three testing circuits, heavy color code wiring, neon voltage indicator, and voltage adapter. The welded steel case has two-tone blue and silver finish. The instrument has a net price of $44.95.

Cap Tube, Bulb Made In One-Piece Assembly

● One-piece construction of a capillary tube and bulb assembly, in sizes for all types of instrumentation work, is now offered by Kensico Tube Co., division of Robinson Technical Products, Inc., Dept. AH&RN, Mt. Kisco, N. Y.

The new one-piece assembly for thermosensing elements is made to specifications but the range offered includes bulb sizes up to ⅜-in. OD maximum, by any desired length, and with the capillary tubing down to a mimimum of 0.010-in. ID.

The design as a single piece saves a joining operation in the assembly of instrumentation systems and gives the added efficiency of joint-free flow, according to the company. (Units are shipped straight, though shown here coiled to indicate design.)

Five year story:

how **Amana** benefits from Anaconda Aluminum

Amana Refrigeration, Inc., Director of Purchasing, Mr. A. C. Schmieder, is shown with coils whose rigidity and resistance to damage is credited to Anaconda Aluminum tempered fin stock.

There's a lot more to buying materials than checking quality and delivery—although Amana Refrigeration, Inc., places plenty of emphasis on both. Here's the story of some extra values Amana gets because, from the inception of their cooling coil production program, Anaconda Aluminum was contacted and permitted to work closely with them.

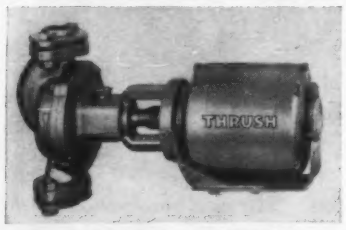
When the idea was still new, Amana and Anaconda Aluminum worked together to develop use of no-cost fiber cores to protect fin stock. In the same manner, Anaconda Aluminum and Amana developed ways to utilize new alloys. And as Amana's sales grew—and along with this growth the need for coils grew—Anaconda Aluminum also worked with Amana's die suppliers to assure maximum efficiency.

Amana took advantage of Anaconda Aluminum engineers' understanding of metallurgical problems—resulting in a switch to a special temper. Production could be made more efficient, handling problems reduced, and fin rigidity increased. In addition, production problems with heavy gauge material in the refrigeration and freezer department were also worked out as the result of this thoroughgoing partnership between Anaconda Aluminum and its customer.

Providing consistent production help, metallurgical assistance, and extra fast delivery when customers need it is part of the product from Anaconda Aluminum. You get proof of it every time you talk with an Anaconda Aluminum customer. For information, contact your Anaconda Aluminum office or write Dept. AC-9, Anaconda Aluminum Company, Louisville 1, Kentucky.

ANACONDA ALUMINUM

Designs Circulator for Quiet Operation



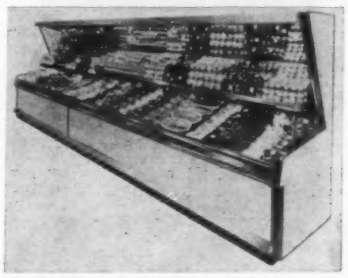
● A circulator designed to operate quietly "even under adverse operating conditions" and to be easily serviceable has been announced by H. A. Thrush & Co., Dept. AH&RN, Peru, Ind.

This model C circulator is said to feature "a unique lubrication of the bearing—oil is constantly fed around the pump shaft through the double spiraling grooved bearing by the rotation of the pump shaft itself. Excessive oil is spun off by non-wearing slingers—no mechanical oil seals are needed.

"The entire pump shaft, seals, and impeller can be removed by releasing the tension on one screw after the bracket has been pulled from the body. The patented Thrush barrel spring coupling will not snap or break since it is flared out so that the coupling will be strongest where the starting torque upon it is the greatest.

"The model C circulator develops a maximum head pressure of 9½ ft. Flanges of ¾, 1, 1¼, and 1½-in. size may be interchanged. It is powered by a ⅓-hp, 1,725 rpm motor with thermal overload protection."

Produce Case Has Two Adjustable Shelves

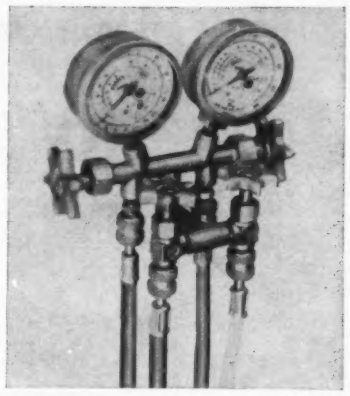


● The availability of a new produce merchandiser with two refrigerated, adjustable shelves and a variety of lighted canopies has been announced by McCray Refrigerator Co., Inc., Dept. AH&RN, Kendallville, Ind.

Designed to comply with the trend to more vertical display to save valuable floor space and to supply more facings, this new model has an 18½-in upper wall shelf, slanted at an 11° angle and adjustable vertically, in addition to the regular shelves.

It is available in rear heights of 67 11/16 in. and 73¼ in. to match the heights of other McCray produce cases with superstructures. Also available is a fixed mirror canopy that raises the over-all height to 84 in. (pictured) "giving a dominant effect of mass display" to draw customers.

Unit Permits Testing Without Disconnecting

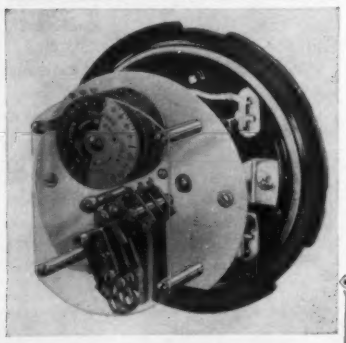


● Madden Brass Products Co., Dept. AH&RN, Aurora, Ill. has announced production of an all-new four-way testing unit, said to allow evacuation, charging, and testing of any commercial, domestic, or automotive system without disconnecting from the refrigerant supply or the vacuum pump.

With this unit, the company said, the need to blow out with refrigerant after pulling vacuum is eliminated. Simply hook up to refrigerant supply, vacuum pump, high and low sides, and proceed.

Four valves, "all with positive, easy seal nylon seats and Teflon packings, give effortless control of entire purging, testing, and charging operation." The units feature forged brass bodies and metal hand wheels.

A conversion kit is available for owners of Madden standard three port units.



Three-Circuit Switch Times Staggered Loads

● For staggered or sequence switching of heating and regeneration loads in off-peak stored hot water space heating installations, a new three-circuit time switch has been developed by Reliance Time Controls, Inc., Dept. AH&RN, 1927 Mead St., Racine, Wis.

The mechanism provides a 24-hour timing cycle and carries a stack of three dials, each with a set of on and off trippers. Through a positive-locking linkage, each dial actuates a corresponding switch, allowing the programming of the three circuits on individual schedules.

Trippers are adjustable at 15-minute increments. A fourth dial, integral with the three dial stack, indicates time of day. Switches are rated at 10 amperes, and the standard timing motor is supplied for use on 220/440-volt, 60-cycle current.

Use Freezer Cabinet For Delivering Food

● Two new transportation freezer cabinets for transporting frozen foods are offered by The C. Schmidt Co., Dept. AH&RN, 1712 John St., Cincinnati 14.

They are frequently used for emergency delivery when operation of refrigerated truck would be uneconomical, the company said.

"One model uses hold-over plates to keep foods frozen at a safe temperature for six hours," it was stated. "The second model is a complete freezer with condensing unit and coils. This is plugged into a 110-v line in the warehouse and again in the store after delivery. Plates will maintain a safe temperature during transportation."

The cabinet is 24½ in. wide, 30½ in. deep, and 6 ft. 7¼ in. high. Capacity is 40 pans.

Mr. Jeff Gilham, Mechanical contractor for Central National Bank, Richmond, Virginia, says:

"Honeywell gave this electric expert service

Mr. Jeff Gilham, at left, in the main area of the Chamberlayne Avenue Branch, Central National Bank. With Mr. Gilham is R. Branson Hobbs, Assistant Cashier and Manager of the branch.

Idlewild To Add 3,000 Tons Capacity To Cool New Multi-Line Air Terminal

NEW YORK CITY—The big air conditioning system at New York International Airport is going to get even bigger — almost half again as large.

The Port of N.Y. Authority has contracted with Carrier Air Conditioning Co. for four heat-activated refrigerating machines which will add more than 3,000 tons' cooling capacity to the 6,300 tons now produced by nine similar machines.

The extra cooling capacity is required as part of the second phase of construction of the central heating and refrigeration plant, to provide the additional services required by the Trans World Airlines and Northwest - Northeast - Braniff terminals, the multi-airline terminal which will replace the temporary terminal building, and the three-faith Chapel Plaza.

The first phase of the structure provided hot water for heating and chilled water for air conditioning for all existing buildings in Terminal City.

When the new machines are turned on next spring the total of 13 machines will be capable of chilling nearly 25,000 gals. of water per minute for circulation to air conditioning units.

The four new units, each of which has a cooling capacity of 773 tons, will be installed in December in the glass-enclosed powerhouse where the airport air conditioning system is on view to the public.

Senator Asks Study To Remove Fall-Out From Atmosphere

WASHINGTON, D. C. — The government was urged recently by Sen. Kenneth B. Keating of New York to launch a search for means of air purification to combat nuclear fall-out.

In a broadcast for a TV station, Sen. Keating declared that it "makes sense for us to spend as much money on ways to clear the atmosphere of radioactive fall-out as on shelters to protect us from that danger."

The Russians' current series of "dirty atmospheric tests" of nuclear weapons, he said, underlines the urgency of the problem. In an age when flights to the moon were scheduled, there should be no such word as "impossible," he asserted.

'Add-On' Building Installs 'Add-On' Air Conditioning In Ontario

TORONTO, Ont., Can. — An "add-on" building here has installed "add-on" air conditioning.

The newly-opened Arcade building was actually designed to be eight stories high, but was initially limited to three stories.

Because of this, Principal Investments, Ltd., owners of the building who assumed responsibility for the architectural and mechanical designs, decided on an incremental air conditioning system for its rentable office space, rather than the induction system originally planned, according to Gordon T. Cuttle, president of Remington Air Conditioning (Canada) Ltd.

The air conditioning system, as presently installed for the third floor only, consists of 58 semi-central incremental conditioners serving an area of 21,612 sq ft. Additionally, however, 22 empty wall boxes were installed around the perimeter of the building to take care of possible future requirements, according to Cuttle.

These additional wall boxes can be used in either of two ways: If greater capacity is required, as for electronic accounting equipment, the necessary additional incremental conditioners can be quickly and easily added.

PROVIDES FOR FUTURE PARTITION CHANGES

Future partition changes, on the other hand, may require the moving of conditioners already installed to the extra wall boxes, which are already available for this purpose.

A small interior zone load on the third floor is served by a conventional low velocity system. After the additional five stories have been added the total rentable office space will amount to 130,000 sq ft.

The incremental system of air conditioning for the building was installed by Armstrong, Baum, Ltd., local mechanical contractor.

Varied occupancy is the theme of the Arcade building. The basement houses a Loblaw's supermarket, fully air conditioned with a low velocity system utilizing a remote condensing unit connected to direct expansion of air handling equipment.

A wide variety of small specialty shops occupy the ground and escalator served second (mezzanine) floors of the building, which comprise the Arcade.

The passageways of the Arcade are air conditioned by a system similar to the one serving the Loblaw store, while the air conditioning of the shops has been left to the individual tenants, most of whom are installing self-contained equipment.

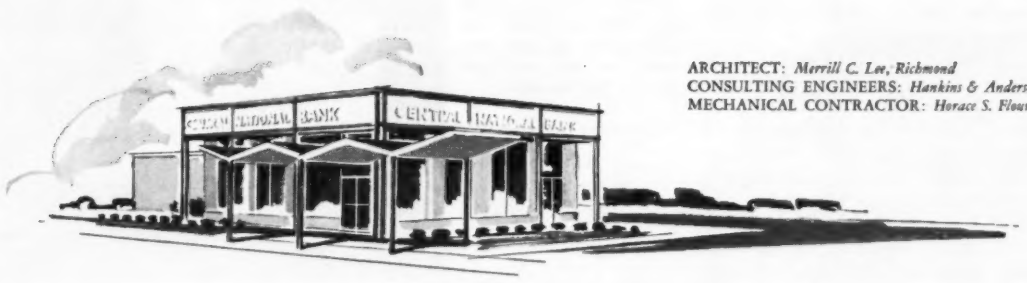
North Carolina Exam Set for Oct. 23

RALEIGH, N. C.—The North Carolina State Board of Refrigeration Examiners has announced that it will give an examination in Raleigh on Oct. 23 for persons who wish to take the examination to qualify for a refrigeration contractor's license.

This will be a regular examination as prescribed in the North Carolina General Statutes, and is designed to ascertain the technical and practical knowledge of the applicants concerning the analysis of plans and specifications, estimating cost, fundamentals of installation and design of refrigeration equipment.

Persons planning to take this examination may secure an application form from the board's office in Raleigh. All applications must be received by the board on or before Oct. 13.

temperature control job and attention."



ARCHITECT: *Merrill C. Lee, Richmond*
CONSULTING ENGINEERS: *Hankins & Anderson, Richmond*
MECHANICAL CONTRACTOR: *Horace S. Flourney. Richmond*

This air conditioning system has Honeywell programmed controls which maintain desired temperatures that conform to the bank's working schedule.

"In a climate like Richmond's, there's no doubt about the need for air conditioning," said Mr. Gilham. "But by the same token we have many mild months through the fall and winter when our weather is cooler. The engineers considered all these factors and specified Honeywell for a smooth-working control set-up. This balanced Honeywell control system gives year 'round comfort plus mild weather economy."

The air conditioning system in the bank is one that employs interlocking Honeywell controls. These controls are preset to maintain a temperature level that matches the working hours of the bank. Employees and customers both enjoy this pre-planned comfort.

You get more to work with when you work with Honeywell. Easily installed controls, accurate specifications, prompt delivery and excellent supervision are the advantages enjoyed by every contractor with Honeywell on his team. And, only Honeywell makes all three types of control systems—pneumatic, electric and electronic. There are 112 conveniently located Honeywell offices across the nation. Call your local one for details. Or, write Honeywell, Dept. AN-9-157, Minneapolis 8, Minnesota.

Mr. Hobbs inspects one of the Honeywell thermostats used throughout the bank. Only Honeywell makes all three types of control systems—pneumatic, electric and electronic.

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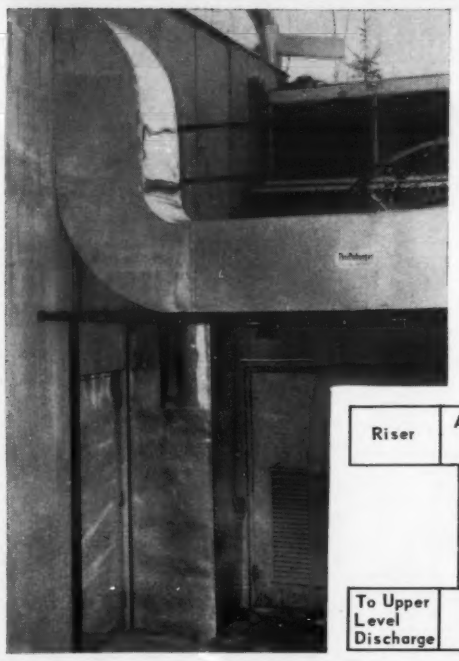
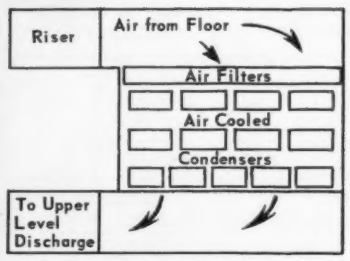
Using Condenser Heat To Help Warm Building Saves Market $500 a Year



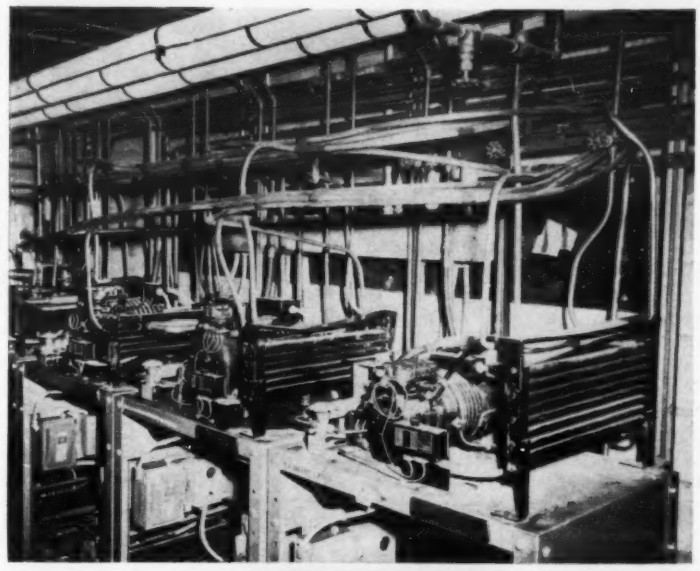
THRIFTCHANGER (diagrammed below) uses condenser heat from refrigeration equipment to warm store air. Lower riser brings cool air from floor level to heat exchanger. Fan is about 5 ft above ground. Upper riser delivers heated air to store.



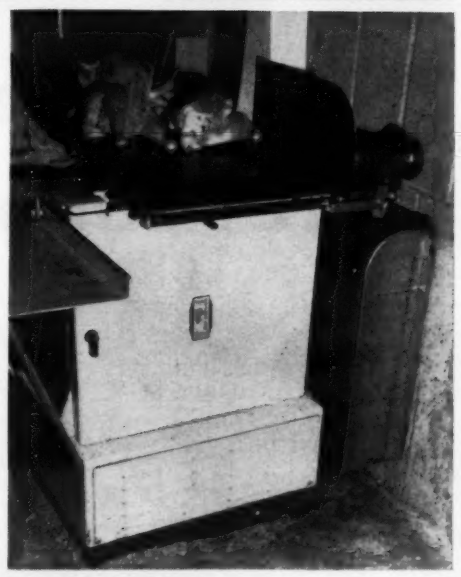
NEW CANAAN, Conn. — In the past three years, a supermarket here has saved more than $500 annually in fuel bills by using condenser heat from its 13 refrigeration units to supplement the building's heating system.

Paul M. Sturges, president of Sturges Heat Recovery, Inc., who devised the system through which condenser heat is diverted for use in the store during the winter, believes the figure should be closer to $1,000.

He argues that the $500 savings figure is based on an inadequate heating plant which the condenser heat supplements. Savings would be almost twice as much if compared with a heating plant large enough to properly heat the store.



VIEW OF equipment room shows refrigerant piping running from compressors to pipe chase at upper right and returning to inlet of water-cooled condenser.



AIR VENT pulls cool air off floor. This additional vent was needed because pipe chase was too constricted for full air flow.

AIR DISCHARGE outlet is equipped with louvers to direct air over the heads of employes working on mezzanine. Cover for outlet during summer is at upper right.

What Thriftchanger Is

Sturges' heat exchanger, which he calls a "Thriftchanger" system, consists of an air-cooled condenser for each compressor placed in the discharge line in series with and ahead of the regular water-cooled condenser.

All the air-cooled condensers are grouped in an insulated sheet metal enclosure mounted outdoors about 8 ft above the ground and adjacent to the rear wall of the market.

A riser, which also acts as pipe chase for the refrigerant lines, draws cool air from floor level up to the enclosure. A thermostat operated Propellair fan pushes the air through a bank of filters and over the air-cooled condensers. Picking up heat from the hot refrigerant gas, it delivers this heat through another duct to the store near ceiling level.

When the Thriftchanger fan operates, the Refrigerant-12 gas condenses in the air-cooled condensers, Sturges explained, and cycles through the water-cooled condensers. When the fan does not operate, the hot gas cycles through the air-cooled condensers and desuperheats and condenses in the water-cooled condensers.

Thermostat cut-in setting on the Thriftchanger fan is higher than that for the store's regular heating system and the cut-out setting is lower. Thus the heat exchange system takes care of the store's needs on cooler days.

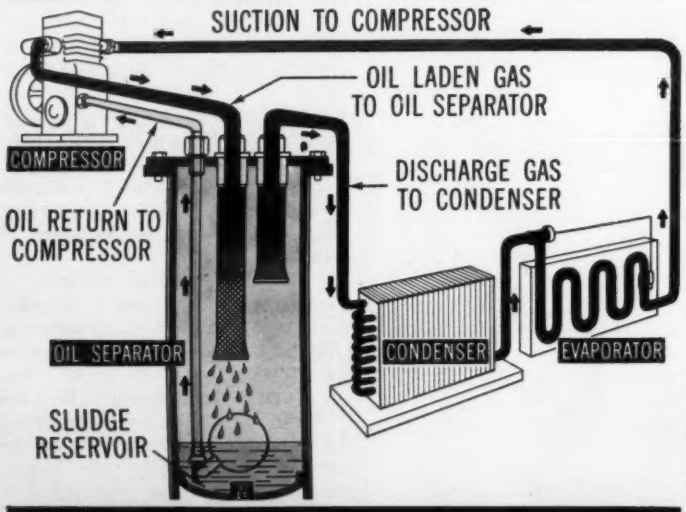
Saves on Power

Amount of power used by the heat exchanger fan is more than offset by savings derived from less frequent use of oil burner motor, pump motor, and three fan motors in space heaters, Sturges said.

The 13 refrigeration compressors have a total capacity of 20 tons.

"We found," Sturges said, "that because the Copeland compressors were non-suction gas-cooled hermetics that we had to run the cooling tower so that the water coils surrounding these motor housings could cool them.

"But accidently, a workman left the cooling tower turned off on a cold week end. The refrigerated cases worked fine and we had no motor burnouts."



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Suit charges infringement of ice-flaking machine patent

A suit filed August 21, 1961 in U. S. District Court in Chicago, by King-Seeley Thermos Co. of Ann Arbor, Michigan, whose Queen Products Division manufactures Scotsman Ice Machines in Albert Lea, Minnesota, charges that Freez-King Corporation of Chicago is infringing King-Seeley Thermos Co.'s U. S. Patent No. 2,753,694, by the manufacture, use and sale of certain ice-flake machines. The suit seeks to enjoin further infringement of the patent and to obtain an accounting for past infringement.

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TECH CENTER

by
FRANK J. VERSAGI

Accurate Load Calculation Critical In Heat Pump Application

Manufacturers make it quite clear, in their discussion of heat pumps, that improper installation and misapplication of their equipment are their major causes for concern.

Some utilities rescind their offer of promotional allowances, of free financing of employe installations when "in the company's judgment the dealer or distributor or factory does not do good engineering designing, does not do good installation work."

Operating Cost Depends Upon Care In Designing

Operating cost, of greatest interest to the user, is resasonable or not depending upon the care that went into design of the system.

All this points to the need for accurate and knowledgeable load calculations, far more important in the installation of heat pumps than for air conditioning alone, according to many authorities.

"Enough application engineers are ignorant of the importance of load determination and sufficient insulation to delay seriously the general acceptance of the heat pump," states Walter R. Yeary, manager of residential project engineering, General Electric. "Also," he continues, "it is my personal opinion that in their drive to establish distribution, some manufacturers have franchised too many heat pump dealers without air conditioning know-how."

Although a few manufacturers, Carrier comes to mind, have developed their own methods for determining loads, methods are diverse and far from standardized. The air conditioning industry has been notorious for its ability to come up with six different estimates for the same job; many feel the situation is worse in the case of heat pumps.

"Rules of thumb are not applicable in the selection of heat pumps," warns a manufacturer's bulletin, "since heating capacity and load are usually so closely balanced that the maximum output of the heat pump allows virtually no margin for error."

Putting it another way, some point out that fuel furnaces are usually selected somewhat oversize and are thus ready for any climatic emergency. "Because of its limited capacity the heat pump cannot be, and should not be, applied in the same manner."

In northern areas, heat loss and heat gain of a structure are usually out of balance, with the heat loss being the greater and more important load. In the South, the reverse is usually true.

Yeary's discussion stresses the importance of infiltration as a "capacity killer." In normal cooling or heating calculations, he points out, such items as air leakage around windows and doors are glossed over without serious results. The practice should not be followed in applying heat pumps, he suggests.

How Serious Can Infiltration Be

"How serious can infiltration be?" he asks, then proceeds to answer:

"At a 70°F winter differential, approximately 76 Btu are required to heat one cubic foot of infiltrated air. A 75° differential requires approximately 81 Btu/cu ft. The colder climates where the differential may be as high as 85° require about 92 Btu/cu ft.

"Suppose there are 250 cfm of infiltration unaccounted for in the load estimate. At a 70° differential, this requires 19,000 Btuh. At 75° differential, it requires 20,250 Btuh and at 85° it requires 23,000 Btuh.

"400 cfm at 75° differential requires 32,400 Btuh."

Yeary's figures show the seriousness of infiltration in heat pump load calculations, and it is imperative that this factor be considered along with construction features, insulation, ventilation, in the load calculation, he concludes.

Wakefield Opens Branch

SPOKANE, Wash. — Wakefield Supply Co. here, a refrigeration and air conditioning wholesaler, announced the recent opening of a new branch in Seattle.

Joe Wakefield, president of the Spokane organization, said the name of the branch is Wakefield Supply Co. of Seattle, Inc. It is located at 219 Pontius Ave., N.

Robert E. Starr is vice president and general manager of this branch operation.

Wakefield Supply is a member of ARW.

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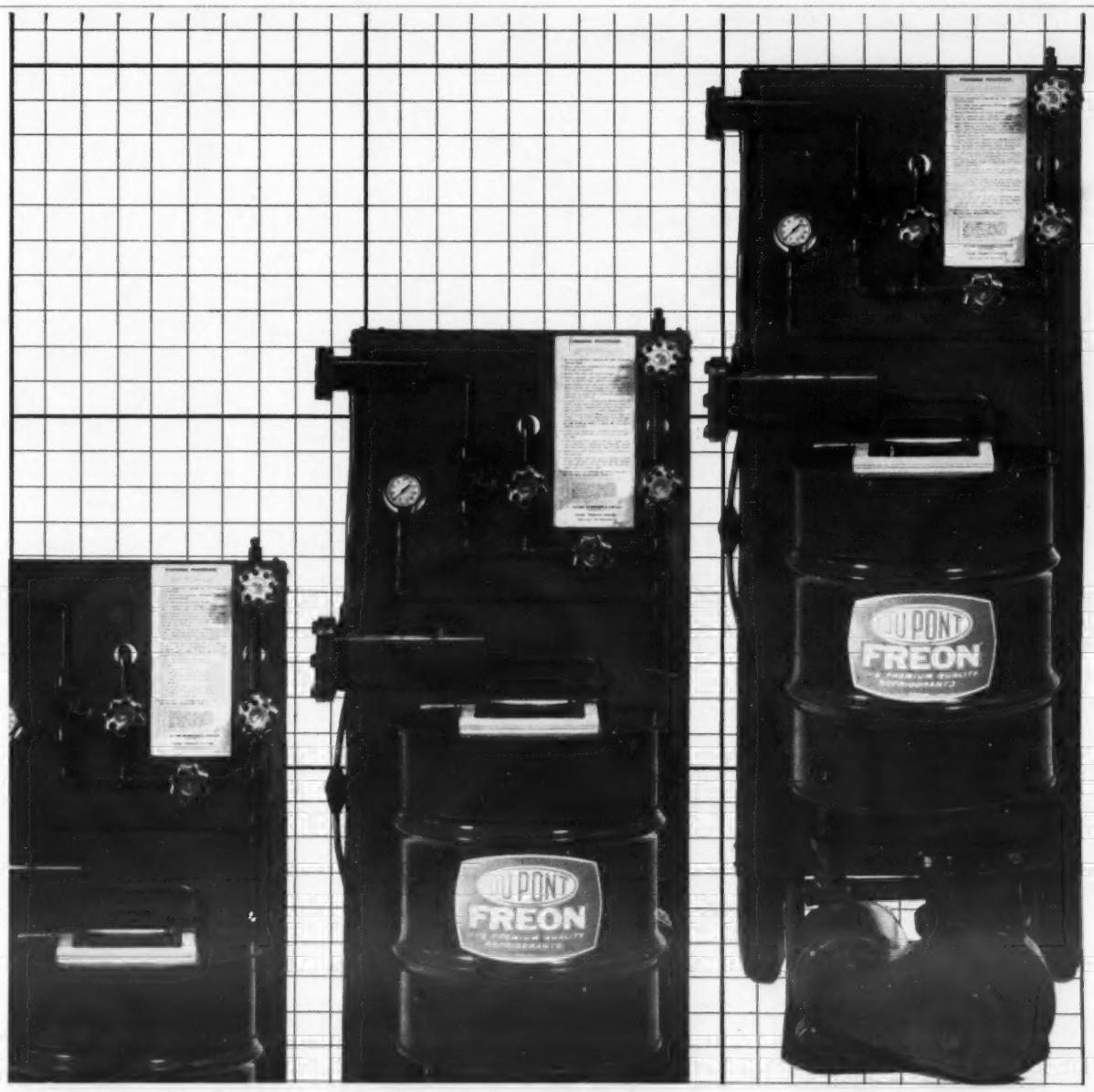

RAISE PROFITS

with this new Du Pont power-cleaning unit for burnouts

Call-backs on refrigeration burnout jobs can run up costly hours of non-profit service time. Now, however, you can help eliminate costly call-backs by doing a thorough cleaning job the first time—with a new power-cleaning unit designed by Du Pont. This new unit does the job not by replacement or simple flushing, but by thorough recirculation. It uses Freon-11*, the most effective selective solvent available for oil, sludge, or grease.

Complete burnout cleanup can be accomplished quickly and efficiently in just eight short steps with this practical, mobile unit. And when you recharge the system, you'll find Du Pont's improved lightweight "Zephyr" cylinders make that job a whole lot easier, too.

To increase your profits and improve your reputation for dependable service, use this cleaning unit for burnout jobs. Ask the helpful air conditioning and refrigeration wholesaler near you who sells "Freon" for all details.

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Cleanliness, Closer Tolerances Cited

Air Compressor Manufacturer Can't Switch Over to Refrigeration Field Easily

By Frank J. Versagi

CLEVELAND — "One of the touchiest jobs I have is convincing people who make such things as air compressors or vacuum pumps that they just can't *convert* to the manufacture of refrigeration and air conditioning compressors, that the tolerances, the manufacturing cleanliness required are beyond their present capability. Then they must decide if it is economically feasible, for them, to make the additions and changes necessary to make refrigeration compressors. So far the answer has always been negative."

A. A. McCormack, consulting engineer for compressor manufacturers, says this ruefully, for each time it has happened it has meant the loss of a client or at least of a project.

"Yet truthfulness has paid off, both in respect and in money, expounds McCormack, whose list of compressor clients reads like a Who's Who of the refrigeration and air conditioning industry. "One time a client gave me $1,000 extra because I called a halt on a project which I felt was doing them no good."

Why does a refrigeration compressor manufacturer use an independent consultant when it maintains its own research and engineering staff?

"There can be several reasons for this. Say a company salesman has come in with an idea; the company's own staff doesn't think it's a very good idea but are reluctant to say so for political reasons. The idea is sent to a consultant for impartial evaluation.

"On the other hand, say the idea is a good one, but not of such importance to cause the research and engineering staff to interrupt its work. Again, it can come to me as a consultant for evaluation.

"Frequently, of course, the work I get has been originated by the company's technical people. Because they are so close to the job, they may need an outsider to look at it. Or they may ask me to build a compressor along some new lines and try it out myself. Say they are going from a 4-pole to a 2-pole motor. Before they go all out with equipment for producing it, I can test out the prints and design by building the prototype for them."

Calorimetry Testing

Another important part of McCormack Engineering's service is calorimetry, the testing of the cooling capacity of compressors. The laboratory has two well-designed calorimeters incorporating instrumentation and controls developed by McCormack. The smaller unit will take compressors from 100 through 6,000 Btuh; the larger calorimeter will handle loads from 5,000 Btuh through 2½ tons. Using a special heat exchange hook up, the larger unit can be adapted for rating 3, 4, and 5-ton compressors, McCormack stated.

"Sometimes, customers of compressor manufacturers have reason, they believe, to doubt the published rating of a compressor. You ran a series of articles in which a supermarket chain was quoted as saying that it had been unable to reproduce claimed ratings.

"When we get such a compressor, we are not told the claimed rating or how the compressor allegedly performed in service. We run our rating test and submit the results with complete objectivity."

There are occasional instances where significant differences exist between claimed and actual performance, but for the most part, McCormack has found, his calorimeters reproduce quite closely the results obtained by those manufacturers who maintain calorimetry facilities. Compressor manufacturers, themselves, send units for test, either to check their own results or because their calorimeters are busy.

Returning to the general subject of consulting, McCormack pointed out that any inventions discovered on the time being paid for by a client is offered free to that company. There have been some of these, he said, and the client has taken out the patent.

Took Part In Developing R-114

McCormack began his refrigeration career with Frigidaire after graduating from Pennsylvania State university which at that time offered a major in refrigeration. One of his most memorable experiences, at Frigidaire, he recalls, was his part in the development of Refrigerant-114.

"We were having difficulty getting optimum operation from our compressors with the then new Refrigerant-12. Especially, we were having troubles with temperatures. My boss came in and asked me to list the specifications which I felt a refrigerant must have to give the desired performance in our compressor."

(Editor's Note: Recently, a du Pont spokesman offered the suggestion to the industry that they could reduce the number of compressor models by designing refrigerant mixtures for their existing pumps, thus eliminating some of the problems of pressure and temperatures in different applications.)

"The physicists who were given my specifications theorized that a refrigerant (which didn't exist yet, of course) with the chemical composition of the present R-114 would fit my requirements. So they made it."

Knowledge of refrigeration compression has enabled McCormack engineering to broaden his consulting work into other fields, including defense work. As examples, he has developed a liquid nitrogen pump and a special high-speed seal for varied uses.

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Water Treatment Corp. Emerges as Servisoft, Ster-O-Matic Merge

CHICAGO—A merger agreement between Servisoft, Inc., a wholly-owned subsidiary of the George Getz Corp. here, and Ster-O-matic, Inc. of Mundelein, Ill., was announced by Bert A. Getz, Servisoft president.

The surviving company, a Delaware corporation, will be the Water Treatment Corp. Its trade-mark will be "Waterco." Following the merger the Getz Corp. will hold 80% of the outstanding common stock of Water Treatment Corp., and the new interests will own 20%, the announcement said.

Ster-O-matic, a firm engaged primarily in research and development and the marketing of new products and systems in the water treatment field, is a subsidiary of the Philadelphia Suburban Water Co. and the Indianpolis Water Co., privately owned water companies; and Ether-Langham Thompson, Ltd., an English electronics engineering firm.

Servisoft, soft water servicing company (incorporated in Illinois in 1935), will be the marketing arm of the new corporation and Waterco will be the product development division.

Getz said he will become chairman of the board of the new corporation and that Howard S. MacAyeal, Ster-O-matic president, will become president of the new company.

Fred H. Horne, vice president and general manager of Ster-O-matic, will become vice president of the new corporation along with Walter P. Beto who will continue as Servisoft's general manager.

Getz also disclosed that Waterco is in the advanced development stage for several new products and that "revolutionary" techniques have been perfected for important roles in the industrial and domestic water treatment areas.

He cited stationary and mobile electrohypochlorinators, a boiler water control system; a packaged modular water treatment system, and a unit designed to overcome water problems associated with air conditioning systems.

Redmond Adds National Sales Reps In Expansion

OWOSSO, Mich. — Redmond Co., Inc. here, manufacturer of fractional horsepower motors and blowers, has expanded its marketing organization to add national sales representatives to the present factory sales engineers.

R. D. Bond Associates, Inc., Narberth, Pa., works directly with Redmond in supervising the sales representative organizations.

M. J. Koenig, director of sales, stated that Redmond's product lines and penetration of new markets have made additional manpower essential.

"While at one time Redmond sales were made almost exclusively to the air moving, heating, and cooling fields, during the past five years we have expanded rapidly into other industries, and now Redmond motors are used in appliances, vending machines, office equipment, and computers, to name a few applications," said Koenig.

"Therefore, we need more men with specialized knowledge in new fields in order to continue this market penetration."

Redmond is a subsidiary of Controls Co. of America.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.

Only 25¢ each.

Construction Contracts & Specifications Institute To Be Held Oct. 19 and 20

MADISON, Wis. — The University of Wisconsin has completed the list of guest lecturers for the Construction Contracts and Specification Institute to be held on the Madison campus Oct. 19 and 20.

The lecturers and topics are:

Keynote address — Robert G. Burkhardt, Robert G. Burkhardt & Associates, Chicago.

Contract Documents — AIA General Conditions — Glenn G. Frazier, Grenn G. Frazier & Associates, Urbana, Ill.

Contract Documents — CEC General Conditions and Mechanical and Electrical Requirements — Robert P. Jaffer, Beeman, Britt, Curley & Jaffer, Inc., Tampa, Fla.

Legal Principles as Applied to Construction — R. Robert Lyden, chief of specifications, 9th Naval District, Great Lakes, Ill.

C.S.I. — Its Aims and Objectives — dinner speaker — James C. Bort, Schmidt, Garden & Erickson, Chicago.

Bidding Procedures — Karel Yasko, state architect, Madison, Wis.

Bonding of Bidders — Warren H. Fuermann, Fidelity & Deposit Co. of Maryland, Milwaukee.

Insurance and the Construction Contract — O. J. Rudser, Employers Mutuals of Wausau, Wausau, Wis.

The meeting is being sponsored by The University of Wisconsin Extension Div. in cooperation with Region 7 of the Construction Specifications Institute. It is for architects, engineers, material suppliers, contractors, and others concerned with the preparation, use, interpretation, or improvement of specifications and contract documents used in all phases of the construction industry.

The institute will be held in the Wisconsin Center Building, which is completely air conditioned.

Attendance will be limited, so all interested are advised to write for enrollment information. A tuition fee of $25 will cover the cost of the course and materials but not the cost of room or meals. Proceedings of this session will be published and given to all conferees as part of the course.

Inquiries should be directed to Edward O. Busby, 3040 Stadium, The University of Wisconsin, Madison, Wis.

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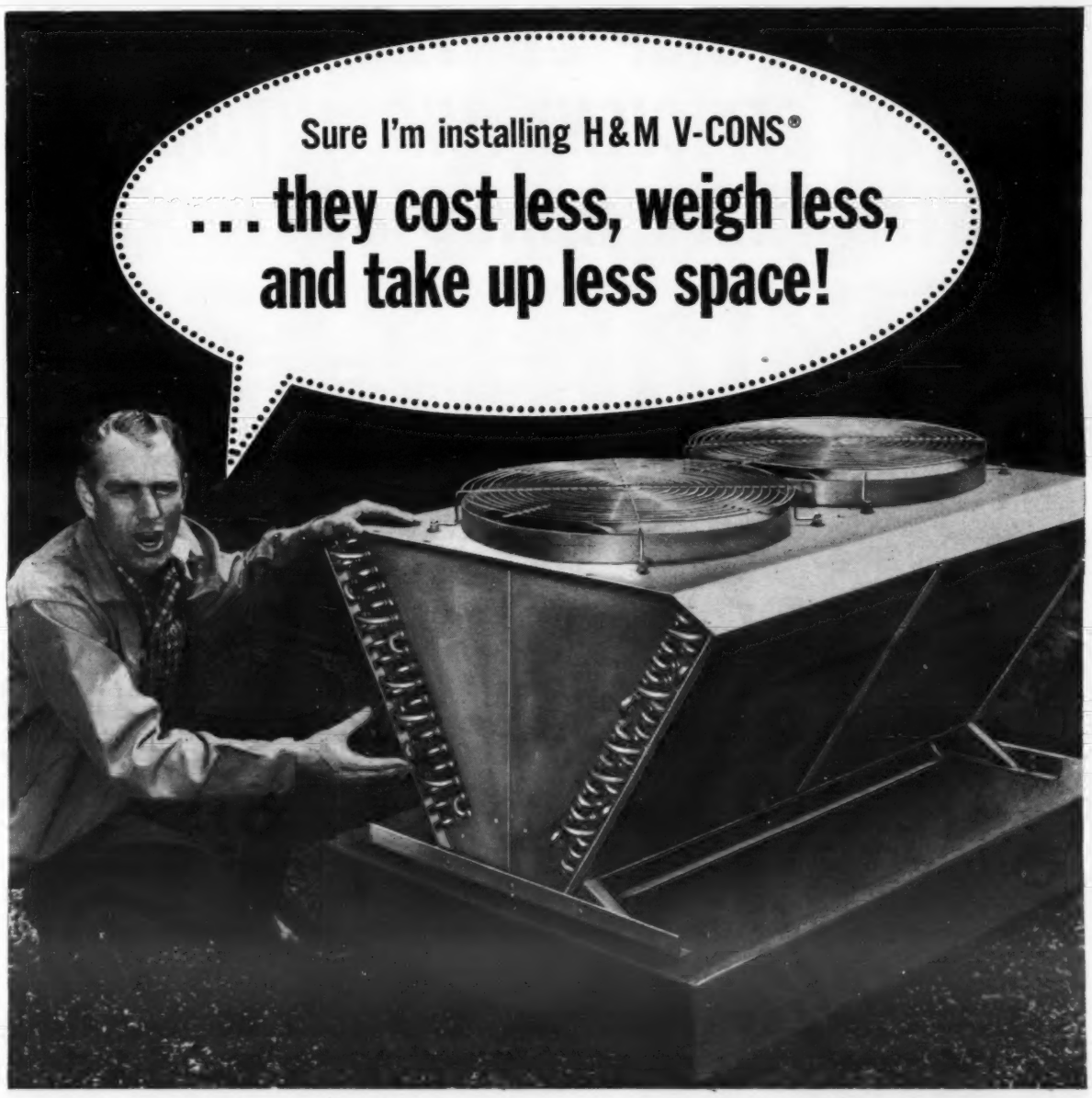


No wonder these Halstead & Mitchell V-Cons® are the hottest selling air-cooled condensers around. First off, they give full performance yet cost up to 15% less than comparable capacity condensers.

Second, they weigh about half as much because they are housed in light-weight, corrosion-resistant aluminum. The fan blades are aluminum, too. Thus, roof loading is much lower and rigging far easier.

Next, they combine the low height and quiet operation of vertical discharge condensers with the minimal space requirements of horizontal discharge units.

Currently available in 3, 5, 7½, and 10 ton sizes, these new units round out Halstead & Mitchell's line of vertical and horizontal discharge condensers of 3 to 100 ton capacity. All models feature H&M's exclusive Turbu-Flo fins, which improve heat transfer between refrigerant and air.

For more information, contact your wholesaler, or write for Bulletin VC-103. Halstead & Mitchell Co., Dept. H-93, Bessemer Bldg., Pittsburgh 22, Pa.

HM

Halstead & Mitchell

Air-Cooled Condensers • Water-Cooled Condensers • Cooling Towers • Air Handlers and Coils

Export Representative: Sabal-Kielmann, 15 Williams Street, New York, New York

What Do Building Owners, Managers Say About Air Conditioning?

MINNEAPOLIS — What do building owners and managers say about air conditioning and its problems when they talk among themselves?

A group of them had some comments to make at a single purpose buildings conference staged during the recent convention of the National Association of Building Owners and Managers here.

In reference to air conditioning of electronic data processing centers, LeRoy E. Varner of Philadelphia reported on a survey he conducted among 32 building owners who had previously installed such centers.

One of the questions he asked was: "Is air conditioning (for the data center) separate or is it combined with the central air conditioning system?"

"I thought this was interesting," Varner said. "Twenty-one replied that their air conditioning systems were separate. Ten replied that their air conditioning systems were incorporated with their central system and were not separate.

Expansion

"The next question was: 'Did the original design provide for expansion?' This, too, is amazing: Twenty replied 'yes' and 10 replied 'no.' Ten of these returns said that no provision was made for expansion.

"Twelve indicated that they had no problems of expansion. One indicated that he had a problem with floor loads and one indicated that he had a problem with air conditioning duct extensions.

"With regard to the problems encountered with regard to the operation and expansion of mechanical equipment, we have some interesting replies.

"New type contact block corrected silver migration problem.

"Now, this may not mean anything to you, but where the under-floor plenum is used for air conditioning supply and the air is admitted to this under-floor plenum at saturation or 100% humidity, the earlier systems were finding that they got silver migration in the bottom of these data processing units, and apparently they have now developed a new contact block which corrects this problem.

"However, in one installation . . . where air was admitted under the floor at 55°F saturated, the floor temperature, in my opinion, was too cold. In the design we produced for our own system we admitted the air under the floor through a plenum at 67° and about 70% relative humidity."

Our survey respondent mentioned the expense of air conditioning large areas when only the computer is in operation. Varner commented that the experience of many owners has been that they start out using their data processing areas a few hours a week but wind up running them 24 hours a day practically seven days a week.

Harold Ulfers of Omaha, commenting on the dirt "problem" in data processing centers, said, "We originally started out with 'Absolutely No Smoking' signs in this room. We have gotten away from this completely. People can smoke when they want to, even throw dirt around. There doesn't seem to be any problem connected with it."

Built-In Dirt

Paul L. Flemm of Pittsburgh added: "I think he is right. Both IBM and Rem-Rand set up specifications that nobody can meet and that no one needs to meet. We have had dust problems, but if you open up an IBM machine, you see more of their own punchings in these than anything else.

"I think the major dirt problem comes from increased air supply with, we will say, 90% infiltration. The more air you put in at 10% efficiency, the more dust you are going to get."

John T. Higgins of Jacksonville, Fla. dismissed the need for auxiliary power for electronic data processing equipment. "In the first place, we would need anywhere from a 350 to 400 kw unit to supply both the equipment and the air conditioning plant that is connected with it.

"We have been told by the manufacturer of this equipment that air conditioning can be off for at least an hour or more without causing any difficulty as far as getting the unit back in service is concerned."

Saving on Demand Charge

Gunnar Anderson, moderator of the conference, offered this cost-cutting suggestion to building owners: "We went to the power company and said that we wanted to test our (air contioning) equipment in February—test run it. We would probably turn it on in March.

"We made a deal with them so that we could test run the equipment and the demand charge would have been close to $1,000. . . . We . . . saved $1,000 by the arrangement.

"In some areas, depending on your tonnage, the demand charge for a single operation could be two, three, or four thousand dollars. So there is a little sum of money involved there."

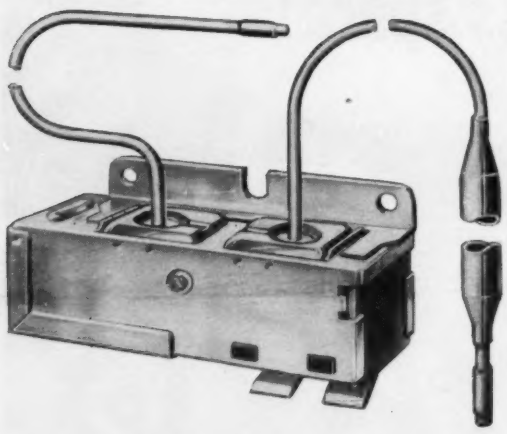
Sound Transmission In One-Plenum System

William B. Kehrt talked with the building owners about the new Bankers Trust Co. of New York building. He was asked: "How do you prevent sound transmission over the top of your partition if you have one plenum for your air?"

He replied: "We have decided to approach this problem on this basis. We are buying an acoustical ceiling with a backing. This is a sound barrier on the back of the acoustical tile. Where we run into difficulty we propose to separate the area above with sound deadening sleeves to carry the air, but only on a trouble basis.

"Our air conditioning outlets are within every 6-ft module around the fixture. If we run into a problem area where there is sound transmission between offices we will then lift the tile and put whatever type partition we are permitted above it and then put these jump ducts in—insulated jump ducts between or through these partition."

HEAT PUMP CONTROL IS SIMPLE, EFFICIENT AND AUTOMATIC WITH THESE RANCO CONTROLS

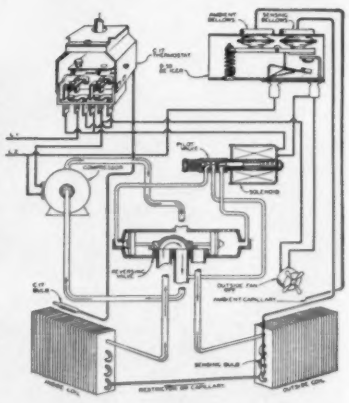


D50 DE-ICER CONTROL—Ranco D50 and D52 De-Icer Controls are the **only** Controls which detect coil ice quickly and automatically. Efficiently simple, they are actuated only by presence of ice on outside coil. Sensing bulb and ambient power element give control at coil. D50 is SPST, D52 is SPDT.

V25 REVERSING VALVE—Ranco V25 and V26 Reversing Valves are slide-type, pressure differential operated. Hermetically constructed with single pilot valve integral with main valve. Special by-pass prevents compressor overload during transfer period. Capacity up through 7½ tons with different valves. Solenoids available in 24, 115, 208, 230 volts with 50 or 60 frequency cycles.

Here is the heart of a heat pump system—controls and valves from Ranco to make operation simple, efficient and automatic in a wide range of climatic conditions. Combine these reversing valves and de-icer controls with a standard cycling thermostat and you give your customers completely automatic, reliable heating-cooling control.

The entire operation is simplicity in itself:



HEATING PHASE: Pilot valve solenoid is energized causing pressure differential to move slide in Ranco Reversing Valve. System operating to remove heat from the outside coil may cause a build-up of ice. As the ice accumulates on outside coil, heat exchange between coil and ambient air is reduced, lowering refrigerant temperature.

DE-ICING PHASE (diagram above): Increase in spread temperature over the clear coil temperature is sensed by the cross ambient bulb to set the Ranco De-Icer Control in action. Temperature drop opens switch to stop fan and de-energizes pilot valve solenoid operating the reversing valve to transfer heat in unit to the outside coil. All ice is removed in 3-5 minutes and coil temperature increases rapidly to close switch that terminates de-icing cycle, starts fan motor and re-energizes solenoid to return unit to heating phase.

COOLING PHASE: Limited vapor charge in ambient air element immobilizes De-Icer Control contacts in closed positions at ambients above 48° F. permitting fan operation through the De-Icer Control. Cooling is thus achieved by the same refrigerant flow as in de-icing and the compressor is operated by temperature demands of the thermostat.

RANCO CONTROLS

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COLUMBUS 1, OHIO

More than 100 million Ranco Controls now in use

OFF THE CHEST

(ADDITIONAL letters from our readers appear on page 18)

PRINCIPLES OF CONCENTRATING VINEGAR MIGHT BE USED IN SEA WATER RECOVERY

The Brown Mfg. Co., Inc.
Pittsburgh, Pa.

Editor:

Your "Inside Dope" article on water needs of our people was very interesting. There is no doubt that refrigeration methods are one of the best ways to solve the recovery from sea water problem.

A half dozen years ago I worked out a plan with some of the H. J. Heinz officials who were bent on concentrating vinegar to reduce its bulk for transportation.

It was desired to concentrate 100 grain vinegar, cutting its bulk in half, the vinegar later to be re-diluted at its destination.

The fine old Henry Vogt Machine Co. of Louisville, Ky., had what appealed to me as the most applicable high capacity ice machine, which has a wash-down type of freezing operation. Thus, no flavor factors or constituents other than clean water were frozen in the tubular ice form.

There is little or no trapping of materials beyond the clean ice crystals because the circulating liquid although almost as cold as the surface of the freezing tube, has a freezing point considerably depressed below that of pure water. The resulting ice from this process was quite clean and palatable.

It would seem that these methods would bear exploring.

WALTER R. BROWN

WOULD LIKE OLIVIERI'S VIEWPOINT . . .

Detroit Edison Co.

Editor:

The two articles written by Mr. Olivieri in your recent issues were of interest to me. Mr. Olivieri presented his ideas in a straightforward, easy to understand manner. I would like to know his views on the relationship between the Utility and the Consulting Engineer.

P. R. DWYER,
Supv. of Heating Sales

●

. . . OLIVIERI READY TO PRESENT IT

J. B. Olivieri & Associates
Detroit, Mich.

Editor:

You may inform your readers that I am available to discuss the role of the consulting engineer at architect's meetings, engineer's meetings, trade association meetings, Italian weddings, baptisms, confirmations, and Bar Mitzvahs.

JOSEPH B. OLIVIERI

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

SEES GREAT ECONOMY IN DESALTING WATER BY FREEZING PROCESS

Board of Water and Light
Lansing, Mich.

Editor:

Your "Inside Dope" description of the possibility of obtaining fresh water at low cost from sea water by freezing was very interesting. It prompted the following observations which appear to make this method more attractive economically than methods utilizing heating and evaporation.

Heat of vaporization ..... 967 Btu per lb.
Heat of fusion (ice) ..... 144 Btu per lb.
Temp. of vaporization, 217°F—temp. of ocean water, 47°=170°.
Temp. of ocean water, 47°—freezing tem., 27°=20°.

These figures are assumed to be typical, without reference to authoritative information regarding sea water. They indicate that freezing requires much less transfer of both latent and sensible heat.

R. A. PARSONS

KEEPING WORLD TRADE AT FINGERTIPS

McCray Refrigerator Co., Inc.
Kendallville, Ind.

Editor:

I returned to the office last Friday and, over the weekend, read the Aug. 7 World Trade issue with considerable interest. George, I was really delighted with the information contained therein, and am keeping the copy in my desk for ready reference. I am sure that any piece of information I want will be at my fingertips.

Congratulations.

J. W. KRALL,
President

MR. SCHLEGE STATED FACTS AS THEY EXIST

Los Angeles, Calif.

Editor:

We were very much interested in your article, "How Los Angeles Judges Equipment for Installation."

We think Mr. Schlege of the City of Los Angeles certainly stated the facts exactly as they exist, particularly in the last paragraph of the first page where he states "We do accept U.L. listings on air conditioning and refrigeration equipment when it is identified as listed." And, where he states in the last paragraph "We do not accept U.L. listing as a full basis on which to approve such material but submit them to certain minimum tests or examinations on our own-----,"

This indeed is our L. A. problem.

ANONYMOUS

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INSTANTLY HEATS AND COOLS AUTOMATICALLY ■ HEATS WATER WITHOUT A BOILER ■ COOLS WATER WITHOUT A COMPRESSOR ■ REQUIRES NO LUBRICATION ■ SEALED FOR LIFE, REQUIRING MINIMUM MAINTENANCE ■ MAINTAINS SAME CAPACITY FOR THE LIFE OF THE UNIT ■ HAS NO MOVING PARTS IN THE HEATING AND COOLING CYCLE ■ FIRST MEDIUM OR LARGE TONNAGE AIR CONDITIONER THAT HEATS. Truly revolutionary . . . investigate for your next building project the new Arkla DF-3000 Gas-fired All Year® Chiller-Heater.

FOR DETAILS CONTACT YOUR LOCAL GAS COMPANY OR WRITE ARKLA AIR CONDITIONING CORPORATION 812 MAIN STREET • LITTLE ROCK, ARKANSAS

ARKLA-Servel

Technical Catalogs

WEST HARTFORD, Conn. — Dunham-Bush, Inc., 179 South St., here, has issued four new technical catalogs describing Brunner multi-drive compressors and condensers (catalog and application manual), and coils and air handling units.

This literature is available on request from the company.

Manual #789 contains 58 pages in looseleaf form pertaining to applications of Brunner multi-drive compressors. The Brunner line consists of semi-hermetic, direct-drive, and belt-drive units from 10 to 100 hp. The application manual contains capacity correction courses, wiring diagrams, vibration isolation and selection tables, capacity and HP curves, and other application data.

Bulletin #790 contains complete specifications and easy-to-use rating tables of the multi-drive line of air conditioning and refrigeration compressors and condensing units. Cutaways and engineering data help engineer to readily select proper unit, it was noted.

Bulletin #6001A presents an engineering and selection guide for direct expansion coils for cooling; water coils for cooling and heating; steam coils, standard and non-freeze. In addition to coil capacity and construction details, rating tables, the bulletin lists summer and winter climatic conditions for U.S.A. and Canada.

Bulletin #6011C describes a compact line of air handling units. It contains an engineering section including methods of coil selection, typical design problems and example, as well as basic engineering information on air conditioning and heating fan capacities. Coil ratings and complete dimensional data are included.

Water Heating Coils

MINNEAPOLIS — Catalog 404-2, a new water heating coil catalog covering the type "5" coil, has been issued by McQuay, Inc., 1600 Broadway N.E., Minneapolis 13.

The catalog contains direct selection tables for simplified, time-saving selections in addition to information on capacity and air and refrigerant pressure drop, it was pointed out.

Fans

DETROIT — A new 48-page, illustrated catalog (Bulletin No. A-1401) describing the American-Standard line of Sirocco fans, Series 81, Class I and II, is now available from American-Standard Industrial Div., Detroit 32.

Capacity tables are provided for the full line of 15 sizes, single-inlet single-width design and 12 sizes, double-inlet double-width design. Outline type drawings are keyed to tabular data to provide important dimensions for use in working layouts. A typical specification for Sirocco fans is also included in the new catalog as a guide to architects, engineers, and fan buyers.

Filters and Strainers

LIVINGSTON, N. J. — Four-page Bulletin D7 giving details on complete line of refrigeration filters and strainers, plus comparative data on filters and strainers, and the importance of low side refrigeration, is announced by McIntire Co. here.

Included are four models of Permaclean Filters for ½ to 20-ton systems, recommended for permanent suction and liquid line installation.

Also shown are cleanable strainers in flanged, demountable shells, factory-sealed strainers for permanent application, and a line of cleanable water strainers in flanged, demountable shells.

Heating

MEMPHIS—A new four-page color brochure describing the best features of forced air and electric baseboard heating has been issued by Hunter Div., Robbins & Myers, Inc., 2500 Frisco Ave. here.

Covering a recessed model for new construction and a standard unit for wall mounting in existing rooms, the brochure includes specifications for the 24 models available.

Valve Line

MELROSE PARK, Ill. — A catalog (203) that describes 292 different valves designed for ammonia refrigeration, L-P gas service, and general industrial applications has been released by Henry Valve Co., 3215 West North Ave., Melrose Park, Ill.

Considerable emphasis has been placed on the company's growing line of "Ductile Iron" valves which are stronger, lighter, smaller, and have greater flow capacity, it was stated.

The balance of the Henry Valve line includes globe and angle shut-off valves as large as 6 in. with interchangeable threaded, socket weld, and welding neck flanges; also pressure relief, flow check, and hand expansion valves, together with strainers, liquid level gauges, charging hose sets, quick disconnect couplers as well as a line of forged steel unions and flanged unions.

Individual Room Control

EAST HADDAM, Conn. — How to provide and install individual room temperature control or zone control on any new or existing air or hydronic heating or cooling system can be found in a new 20-page catalog which covers the complete line of "Zone-A-Trol" valves, damper actuators, and accessories manufactured by the Econo Products Co., Div. of Viking Instruments, Inc.

Heating Controls

GLENDALE, Calif.—Full information on General Controls Co.'s complete line of heating controls is presented in a new 98-page catalog now available from the company's sales promotion department at 801 Allen Ave. here.

Discussed in catalog 608.426 are the firm's new "Sheer Line" room thermostats offering any combination of features, the "Midgitrol" line of compact gas valves, the TD series of time delay relays, and scores of other General Controls products used in residential and light commercial applications.

To obtain any of the literature items described on this page, write to the firm mentioned in the story at the address supplied.

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BIG BONUS

FOR NEWS READERS AND ADVERTISERS

AIR CONDITIONING, HEATING & REFRIGERATION DIRECTORY will be a **REGULAR ISSUE** of the "News" starting this year!

For the first time since its inception in 1932, the Air Conditioning, Heating & Refrigeration Directory will be delivered to all Air Conditioning, Heating & Refrigeration News subscribers. Its cost will be included in regular subscription rates. As just one of the many News extra services to readers this year, the Directory will be published as the 52nd issue on December 25th.

No change in its handy, 6 x 9 book-size for table-top reference, the Directory will contain:

MANUFACTURERS SECTION – over 1,600 firms, including location, phone number, key personnel, products

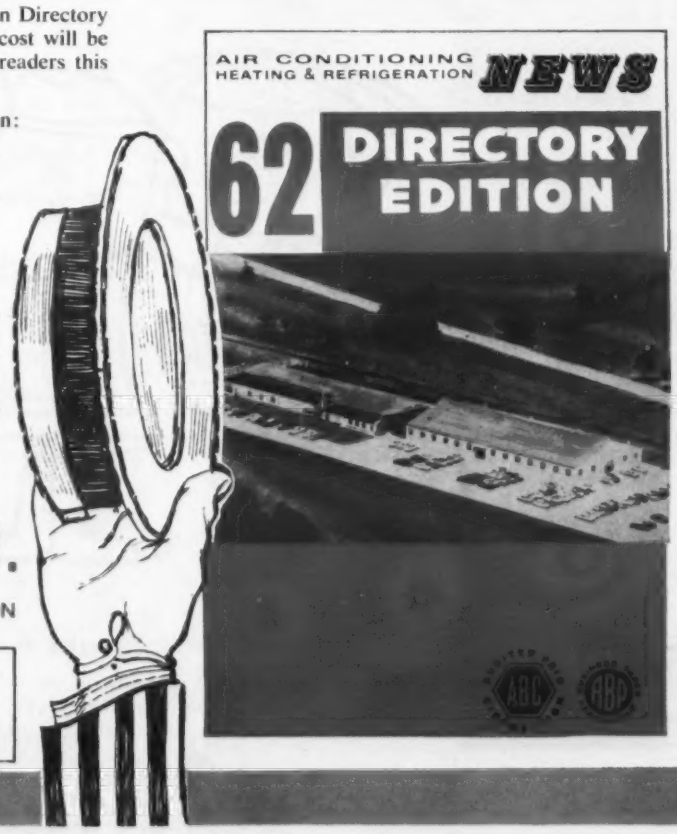
PRODUCT SECTION – over 4,000 products in 971 product categories, with over 8,500 company cross reference listings

TRADE NAME SECTION – over 2,200 trade names, with manufacturer cross reference

WHOLESALER SECTION – over 1,000 separate companies *Plus* **TRADE ASSOCIATON SECTION – EXPORTER SECTION –**

This new procedure will be a boon to advertisers, too. It automatically increases the guaranteed circulation from 15,000 to over 21,000, and gives advertisers an accurate ABC audit of distribution. As in the past, the Directory will also be distributed at the national ARI Exposition in February and through wholesalers. All this, at no increase in advertising rates, either for advertisers already signed up, or those still contemplating space in the Directory.

If you're a reader, look for your bonus shortly after December 25th. If you're an advertiser, collect your bonus before the final closing date – October 2nd.



BUSINESS NEWS PUBLISHING CO.

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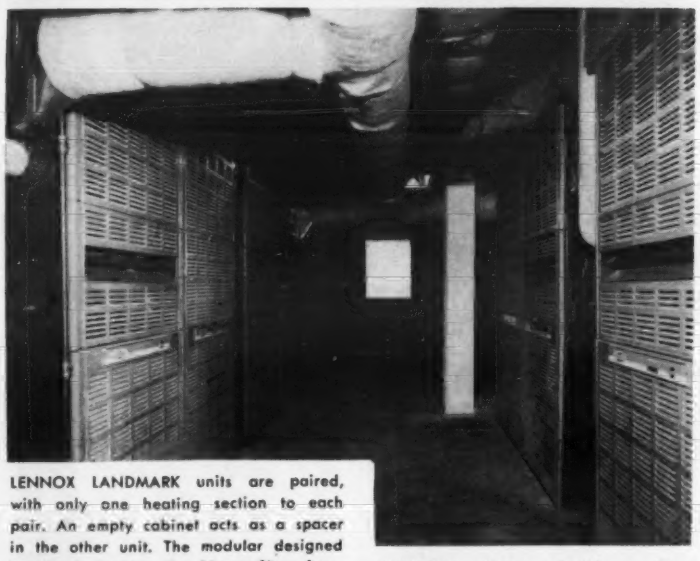
MUrray Hill 2-1928-9	AXminster 2-9501	FRanklin 2-8643-4	WOodward 2-0924

10 Fan-Coil Units Heat, Cool Library *with Individual Controls*



LENNOX LANDMARK units are paired, with only one heating section to each pair. An empty cabinet acts as a spacer in the other unit. The modular designed Landmark locates the blower-filter function in the lower cabinet, a heating section (or spacer cabinet) in the middle, and evaporator cabinet above. The insulated round pipe carries combustion products from the side takeoff flues.

SANTA ANA, Calif. — Ten separate fan-coil units with individual controls, each serving a separate zone, provide cooling and heating for the new Santa Ana Public Library.

Yet return air from all zones is captured through an ingeniously concealed floor grille in the main reading room and fed back to the fan-coil units through a single duct.

The $805,000 building covers more than 40,550 sq ft of space and designed to house 175,000 volumes. Main floor and mezzanine, covering 28,000 sq ft, is cooled by a 90-ton cooling system and a 1,575,000 Btuh heating system.

The system consists of paired Lennox "Landmark" units in the basement and 11 air-cooled condensers mounted on slabs outside the equipment room.

The Landmark units consist of three sections. Bottom section is the blower-filter section. Central section is a heating section or empty spacer cabinet. Top section is the evaporator cabinet. There is only one heating section in each pair of units.

Sixty tons of cooling, employing eight condensing units, is provided for the six zones on the main floor. This area, covering 16,830 sq ft, is divided into children's library, lecture room, staff work area, main reading room east, main reading room west, and main reading room center.

High sidewall registers and ceiling diffusers are used for all areas except the lecture room and children's library. Here floor perimeter distribution is installed. A total of 23,300 cfm of air is circulated.

The mezzanine area, divided into staff, reference, magazine, and meeting rooms, is served by three 10-ton condensing units connected to three pairs of Landmarks.

Each zone is provided with 136,000 Btuh of heating, 118,000 Btuh of cooling, and an air volume of 4,000 cfm.

The single return air grille is located in the floor of the main reading room, about 15 ft in from the main entrance. It is hidden by a balustrade covered by a table top on which patrons can rest their books.

A total of 42,250 cfm is circulated at all times the building is occupied, with 35,900 cfm recirculated through the single return duct. Fifteen per cent of outside air is automatically admitted whenever the equipment is in operation.

Each zone is individually controlled by an automatic cooling and heating room thermostat operated through a central time clock.

VIEW FROM MEZZANINE shows arrangement of stacks and reading tables and placement of large ballustraded return air opening (opposite front door) which handles entire recirculated air volume.

Equipment serving each zone is capable of maintaining 75° db inside temperature the year round. Continuous air circulation is maintained at all times the central time clock is energized.

The basement of the building, a 12,000-sq ft area, is heated with 217,000 Btuh and receives a total air volume of 7,200 cfm. Heating equipment is operated through a two-stage thermostat.

Bell & Gossett Promotes Braden

MORTON GROVE, Ill.—Promotion of W. Donald Braden to field sales manager, Hydronic Accessories Dept., Bell & Gossett Co., was announced by R. E. Moore, president.

W. D. Braden

Braden, who joined the company a year ago as assistant manager of the market development division, will be responsible for sales to wholesalers, national account distributors, and original equipment manufacturers.

Mountianside Hospital Completely Cooled Now

MOUNTAINSIDE, N. J.—With the installation of new air cooling and heating equipment, Mountainside hospital is now completely air conditioned.

When the hospital's building and expansion program was launched in 1958, the heating and ventilating system in the southwest wing was designed for future air cooling. As the building program progressed, air conditioning was installed in the new areas. The air conditioning system work this summer also included the west wing, the kitchen, and the cafeteria.

Air conditioning, hospital officials pointed out, prevents cross-ventilation in patient areas and is important in the infection control program.

John A. Smith Dies

WATERTOWN, N. Y.—John A. Smith, 65, heating, air conditioning, and refrigeration contractor and serviceman, died here Sept. 1.

PREVENT STUCK PUMPS!

GET USE PROVEN PUMP AID

with New, Improved Features.

1. A new RUST INHIBITOR . . . which VAPORIZES and reaches into the smallest crevices.
2. CONTROLLED FOAM ACTION . . . provides full seasonal protection without foam at start up time.

Now is the time to prevent stuck pumps . . . eliminate consuming repairs next spring. After draining pump, simply inject PUMP AID into pump housing through drain hole. Aerosol packaged PUMP AID E-X-P-A-N-D-S to cover all interior surfaces. At start-up time — just throw the switch and your pump is running. PUMP AID is water soluble and washes away. May be used in any make or model pump.

PUMP AID... PREVENTS CORROSION • PRESERVES SEALS • WILL NOT FREEZE • WILL NOT EVAPORATE • IS WATER SOLUBLE • IS NOT TOXIC • IS EASY TO USE • IS REASONABLY PRICED

Order by the case of twelve cans today from your dealer and be prepared when shut-down time comes.

Or write . . .

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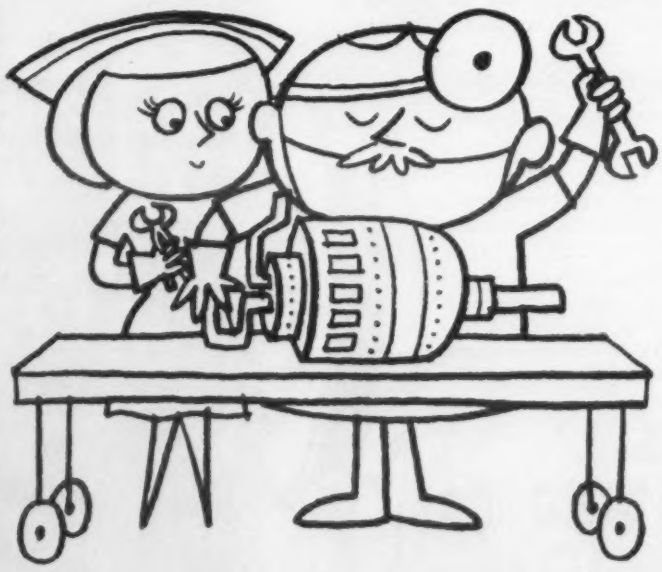

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No fits and starts for this specialist in the field of Compressor-ology. Dr. Medic gets to the heart of the trouble immediately. He is an experienced diagnostician, specializing in cases of Compressoritus.

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TAKES ROUGH TREATMENT!

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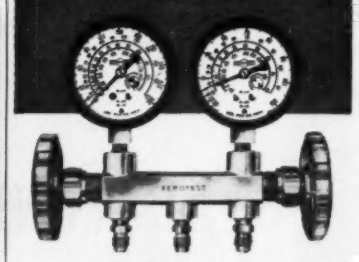
KEROTEST REFRIGERATION TESTING OUTFIT



- ✓ All connections in accordance with ARI specifications.
- ✓ Furnished with or without gauges.
- ✓ Furnished with or without handwheels.
- ✓ Clearview, accurate gauges.

The Kerotest Refrigeration Testing Outfit is used for a variety of services including:

Purging air or gas from high side of system—charging oil in low side—testing low side controls—charging liquid gas in high side—charging gas into low side—setting expansion valves—purging gas from gauge lines.

Kerotest Refrigeration Testing Outfits withstand severe service day after day. Sturdy forged brass construction in single or double units. Write for full information or send for catalog.

Ask your Kerotest wholesaler for Testing Outfits Nos. 5131 and 6131.

KEROTEST

KEROTEST MANUFACTURING CO.
2502 Liberty Avenue
Pittsburgh 22, Pa.

Gibson Seeks Top Room Unit Spot--

(Continued from Page 1, Col. 5)

and Panama. Among the items of business:

● A two-hour, entertainment-filled show in which were introduced Gibson's 85th anniversary, 1962 models of air conditioners, refrigerators, freezers, and electric ranges.

Air conditioners are available in capacities from over 6,000 to 22,000 Btuh. NEMA ratings are claimed for the units, although in a later sales presentation one of Gibson's sales managers stressed that "in talking to a customer, ratings may confuse the picture. Sell comfort, not ratings."

The Gibson air conditioner line for 1962 is summarized at the end of this article.

● As part of a sales incentive program, Gibson is offering its dealers warehouse allowances, 100% return privileges, free floor planning, a specially designed air conditioning sales and application manual.

● Gibson's great emphasis on proper service was manifested during the convention. First, two distributor service managers, John G. Sarrazin, Peninsular Dist. Co., Detroit, and Homer H. Wittes, Toledo Appliance, Inc., Toledo, were presented awards during the first of some 20 award dinners to be held in Panama. (The full story on Gibson's concept of the role of service in sales will appear in a later issue.)

Second, Bob Rivett, national service manager for Gibson, held a service clinic during which he explained product and the importance of proper human relations in service work. In a well thought out case history (see page 15), Rivett showed how much easier it is to render good service than bad.

Third, Frank J. Versagi, editor of AIR CONDITIONING, HEATING & REFRIGERATION NEWS, spoke on the extent of service requirements in the country and showed that the question is no longer "Shall we bother with service?" but "WHO will bother with service, for if someone doesn't, you won't sell your product."

● At a "College of Profits" seminar, two representatives from the appliance press made a basic point: "Discount houses are here to stay."

Earl Lifshey, columnist for *Home Furnishings Daily* insisted that "Mass distribution follows as a logical necessity from mass production. Discounting is reasonable and can be profitable."

E. Allen, publisher of *Mart Magazine,* seconded this premise and went on to predict that the mass merchandising of the future "will be done by giant combinations of supermarkets and department stores. This has already begun, of course, and will become a major factor in the economy."

Both speakers warned that the independent retailer must determine where he wants to be five years from now and start planning to get there.

Allen pushed hard for "personalized selling." He suggested things like lemonade or popsicles in display refrigerators. Advertising is a must, he feels, and recommends that the dealer estimate his sales for the year and set aside 3-5% of the estimated volume for advertising.

● Overtones of world trade and international goodwill pervaded the Gibson convention. For one thing, Panamanian guests of honor and their wives were seated at the head table, introduced, and asked to say a few words. For another, El Panama Hilton, the convention hotel, has recently purchased some 155 Gibson room units. Gibson has two local distributor dealers in the city. (The parent corporation, Hupp, also has a Typhoon distributor; a description of two of these operations will appear in later issues of the NEWS.)

Gibson's patented "Air-Sweep" is being made available on most 1962 air conditioners, the company announced. J. M. Farrell, vice president of room air conditioner sales, claims that Air-Sweep results in a 30% increase in the cooling effectiveness of the units.

Among the models in Gibson's 1962 line:

A-series—8,100 Btuh capacity, for application at 115, 230, 208 volts (3 models).

G-series ("Texan")—offering 22,000 Btuh, with units available for either 208 or 230-volt applications.

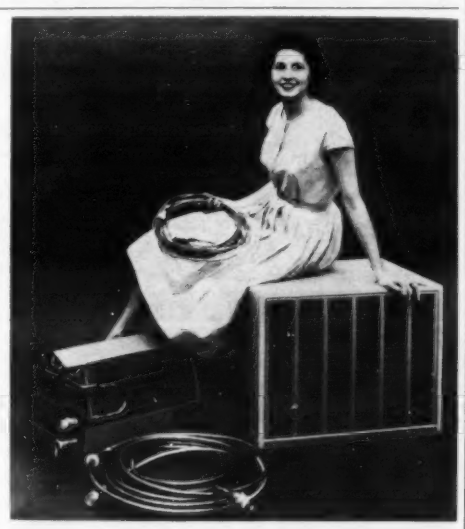
D-series ("Slumber Master")—"will cool any bedroom up to 12 by 18 ft," 2 models, both for 115-volt use.

B-series ("Suburban")—capacities from 10,000 to 14,500 Btuh. The 10,000 Btuh unit operates at 115 volts; the 14,500 units are available for either 208 or 230-volt installations.

T-series ("Metropolitan")—all nominal 1-hp units offering from 10,100 to 12,100 Btuh available in both 208 and 230-volt models.

"All these units are quieter on the *outside* than - - - and - - - are on the *inside,*" enthused Bill Winn, general sales manager for room units. Some of the units can be mounted flush outside, to comply with those city codes which prohibit any overhang, he said.

"And let's not think that climate and geographic location are indispensable criteria for generating room unit sales," Winn concluded. "Do you realize that of the top 500 counties in the country, relative to room unit sales, Detroit is 29th and Cleveland is 28th. Such cities as Chattanooga, St. Petersburg, Tulsa, Shreveport, Kansas City fall behind areas of Ohio, Michigan, and Indiana in room unit sales."



GENERAL ELECTRIC'S new Quik-Attach air conditioner, in the 2-ton range, is said to combine the installation ease and factory-sealed advantages of self-contained units with the flexibility of split-system air conditioners.

G-E Quik-Attach--

(Continued from Page 1, Col. 3)

G-E "Spine-Fin" condensing coil. This coil is made up of thousands of tiny aluminum "spines," which literally "comb" the heat from the air, it was pointed out.

The Quik-Attach air conditioner uses a hermetically-sealed compressor.

Standard equipment includes the weatherized, air-cooled remote condensing unit, precharged connecting tubing with Quik-Attach valves, filter-drier, low-pressure cutout, two-speed fan motor with permanently lubricated sealed bearings, and cooling coil for indoor installation with either upflow or downflow furnaces.

Accessories available include straight-line design thermostat and coil enclosures.

Air Conditioning & Refrigeration FACTORY

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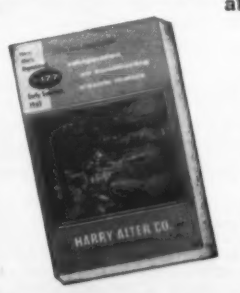

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These new die-cast handles from National Lock are designed for refrigerators, freezers, display cases, coolers, keep-warm cabinets, ice-makers . . . or any standard application that calls for a high-quality, non-locking handle. Bright Chrome or Chrome with Baked Enamel Color. For special-application handles, have our design-engineering staff assist you. Write us.

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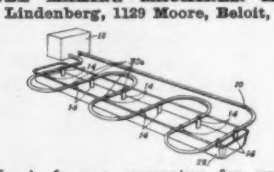
PATENTS

Week of May 30 (continued)

2,986,020. EVAPORATOR FOR ICE-CUBE MAKING MACHINES. Milton L. Lindenberg, 1129 Moore, Beloit, Wis.

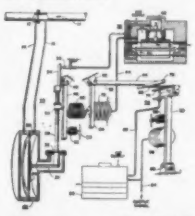


5. A freezer apparatus for use in ice cube making machines comprising a conduit for carrying a refrigerant and having a plurality of pairs of transversely aligned spaced apart openings therethrough, one of said openings of each pair being elongated upon an axis parallel to the axis of said conduit, a plurality of freezing element jackets having a closed end and an open end, the open end of each of said jackets being positioned to respectively engage the portions of the conduit surrounding each of said elongated openings. . . .

2,985,949. THERMOCOUPLES AND METHOD OF MAKING THE SAME. Harold W. Rice, Playa Del Rey, Calif., assignor to Robertshaw-Fulton Controls Co., Richmond, Va.

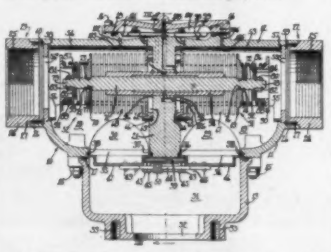
2. A method of constructing a thermopile from a pair of sheets of dissimilar thermoelectric material having different widths which comprises cutting substantially parallel slits in the first of the sheets for the greater portion of the width thereof to form a plurality of equal width strips from the first material, cutting substantially parallel slits in the second and wider of the sheets for the greater portion of the width thereof to define strips displaced relative to one longitudinal edge of said second sheet so as to be angularly displaced relative to the strips defined in said first sheet when the longitudinal edges and planes of said first and second sheets are parallel. . . .

2,986,151. FLOW MEASURING DEVICE. Jack F. Shannon, Euclid, Ohio, assignor to Bailey Meter Co., a corporation of Delaware.



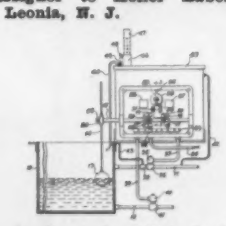
1. A device for establishing a signal representative of a variable, comprising a force balance system including a beam adapted to be displaced by a force proportional to the magnitude of the variable to develop an output signal, a motion balance system including a first member movable in response to said output signal from said force balance system and a second member movable to balance the motion of said first member and to establish an output signal proportional to the balancing movement, and a yieldable connection between said first member and said force balance beam to apply a restoring force to said force balance beam upon movement of said first member, the position of said first member and output signal from said motion balance system being directly proportional to the restoring force applied to said force balance beam.

2,986,152. FLOW CONTROL. Frank C. Bayer, Euclid Ohio, assignor to Thompson Ramo Wooldridge, Inc.



1. Flow control mechanism to control the flow from a plurality of feed lines to a main line comprising a housing, a plurality of inlets to said housing to be connected to the feed lines, an outlet from said housing to be connected to the main line, individual inlet chambers and an outlet chamber in said housing for said inlets respectively and said outlet, a reference fluid inlet to said housing, and a reference fluid chamber for said reference fluid inlet in said housing, a plurality of flow paths between said reference fluid inlet and said reference fluid chamber, and a flow path from each of said individual inlet chambers to said reference fluid chamber, a reference fluid control member in said reference fluid chamber for controlling said reference fluid and controlled by fluid from each of said individual inlet chambers. . . .

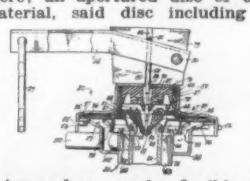
2,986,154. WATER TREATMENT DEVICE. Frederick F. Pintz, Leonia, N. J., assignor to Heller Laboratories, Inc., Leonia, N. J.



18. A chemical adding tank for a water system comprising a tank; liquid with chemicals in solution in said tank; a container within said tank carrying an opening connected therewith such that said liquid with chemicals in solution is fed from said tank to said container; a calibration rod within said container which governs the amount of liquid with chemicals in solution which enters said container from said tank; a pipe for feeding fresh water connected to said container. . . .

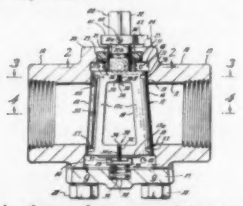
2,986,155. VALVE. Orville E. Doyle, 11961 E. Los Palmas Dr., Fullerton, Calif.

1. In combination with a valve having an inlet pipe providing a source of a fluid, a valve seat positioned adjacents an end of said inlet pipe, and means for engaging said valve seat to block flow of fluid from said inlet pipe, an outlet chamber positioned around said inlet pipe and providing for flow of fluid away from said valve seat, said outlet chamber having at least one opening in the wall thereof communicating with surrounding atmosphere; an apertured disc of elastic material, said disc including an



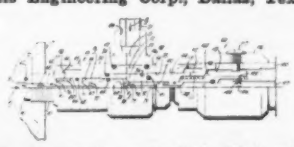
outer ring and an annular flexible web connecting said ring and said apertured disc; means clamping said outer ring within said outlet chamber. . . .

2,986,156. AUTOMATIC LUBRICANT-SEALED PLUG VALVE. Alexander S. Volpin, 10200 W. Broadview Dr., Miami Beach 54, Fla.



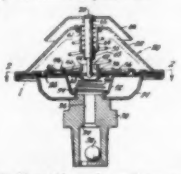
3. A plug valve, comprising, a valve housing having a flowway therethrough defining spaced flow ports, a frustoconical plug having a nominal transverse dimension rotatably seated in the housing and cooperating with said flow ports for controlling said flowway, said plug having a transverse port therethrough adapted to register with the flow ports when the plug is rotated to the flowway-opening position, the body of said plug being bifurcated along a plane generally diametrically of the plug and extending generally longitudinally thereof from one end of the plug to a point spaced a short distance from the opposite end of the plug whereby to provide a pair of plug portions capable of flexure relative to each other. . . .

2,986,157. PILOT VALVE. William W. Dollison, Dallas, Texas, assignor to Otis Engineering Corp., Dallas, Texas.



4. A remote controlled pilot valve comprising a valve body having a bore therein, said bore having restricted diameter portions separated by an enlarged diameter midportion, a plunger member disposed in said bore for longitudinal sliding movement therein between a first position wherein one end of said plunger is disposed in one of said restricted diameter bore portions to a second position wherein said one plunger end is disposed in said enlarged diameter mid-portion of said bore to allow fluid communication between said one restricted diameter bore portion and the enlarged diameter bore mid-portion adjacent thereto. . . .

2,986,159. CONSTANT PRESSURE VALVE. Mahlon C. Snyder, 42 Eastwood Rd., Wanakah, N. Y.



3. A bi-directional valve opened in response to reverse pressure differentials on opposite sides thereof, comprising a hollow housing, a sheet of flexible material having its margin secured to said housing and forming a diaphragm which divides said housing in two volumes severally exposed to said pressure differentials, said diaphragm being provided with a central opening, a first disc-like element on one side of said diaphragm and having a hole registering with said opening, a second disc-like element on the other side of said diaphragm having a hole registering with said opening....

2,896,160. PINCH VALVES. Byron H. Acomb, Watchung, N. J., assignor to Union Carbide Corp., a corporation of New York.

4. A pinch valve comprising a valve body having an inlet connected to a

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- ☐ Refrigeration Engineer's Manual—$3
- Refrigeration Problems and Their Solution—$1.50 each ☐ J-1 ☐ J-2 ☐ J-3 ☐ J-4 ☐ J-5
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DEVELOPMENT ENGINEER with 15 years' diversified experience desires position with progressive company entering air conditioning and/or heat pump field. Experience includes design, development, and test of air conditioning units and heat pumps to ten tons' capacity. Presently employed but desire a more challenging position. BOX A6862, Air Conditioning, Heating & Refrigeration News.

POSITIONS AVAILABLE

SALES ENGINEERS: Air conditioning and heating sales engineers needed for Seattle, Washington; New Haven, Connecticut; Buffalo, New York; Washington, D. C.; Memphis, Tennessee; Toledo, Ohio. Qualified sales engineer with heavy refrigeration experience needed for Des Moines, Iowa. Experienced in application and design engineering. Proven sales ability with architects, consulting engineers and trade. Excellent company benefits. Retirement and insurance. Salary guarantee plus commission. Send resume, photo, location to DUNHAM-BUSH, INC., 179 South Street, West Hartford, Connecticut.

LABORATORY TECHNICIANS — Experienced in the test of air conditioning equipment for second and third shift operations. Permanent positions with well-established, employee-owned, independent organization serving large industry groups. Good pay plus shift bonus and recognition of responsible personal performance. Send resume to ELECTRICAL TESTING LABORATORIES, INC., New York 21, New York.

RARE OPPORTUNITY to represent leading refrigeration product to the wholesale trade. We are interested only in men with background and experience who desire to form a lasting relationship with a well established highly rated electronics firm. When replying please include all important information regarding yourself and background (all replies will be kept in strict confidence.) Write to: Herman Meyer, FEDERATED ELECTRONICS, INC., Drifrees Division, 134-20 Jamaica Ave., Jamaica 18, New York.

SERVICE MANAGER to manage factory branch. Experienced in selling and servicing commercial and industrial central air conditioning and warm air heating installations. National manufacturer now expanding operations requires man with experience in selling service contracts to building maintenance managers. Must presently be living and working in large metropolitan city. Salary, commission and generous share of branch profits. Must have car. Send complete resume and snapshot. P. O. BOX 2092, Charlotte 1, N. C.

SALES ENGINEER, technical graduate or equivalent with refrigeration and sales experience. Age 23 to 36. Interesting work calling on contractors, wholesalers and air conditioning and refrigeration manufacturers in established territories for a nationally known control manufacturer. Starting salary based on experience. Replies should contain complete resume of education and experience. All replies will be kept confidential. BOX A6829, Air Conditioning, Heating & Refrigeration News.

FIELD SERVICE engineer—opportunity for experienced refrigeration service man, under 40, to handle field service in limited areas with headquarters in Buffalo, New York. Food store experience preferred. Must be free to travel. Willing to move at company expense if necessary. High school (or better) education. Give full details, with five references and send photograph with first letter. Salary, expenses, insurance, welfare and other benefits. BOX A6852, Air Conditioning, Heating & Refrigeration News.

ENGINEER—FAN coil units. Leading Milwaukee-based company with full line of heating and air conditioning products seeks a young engineer with 2-5 years' experience in the fan coil unit field. Will have charge of expanding fan coil design and development activity. Good salary, full fringe benefit program, desirable urban location with opportunity for continuing education. Send resume to BOX A6859, Air Conditioning, Heating & Refrigeration News.

AIR CONDITIONING service mechanic, experienced in commercial and industrial field. Good salary, work in metropolitan New York all year. Excellent opportunity for permanent position with well known outfit in New York City. Write BOX A6861, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT FOR SALE

SURPLUS EQUIPMENT—New 3 ton air handling units—D.E. coil with capillary refrigerant control and direct driven blower assembly, insulated cabinet, $115.00 each. In quantities of 5, $100.00 each. ARCCO, INC., 2201 Grand Avenue, GR 1-7771, Kansas City, Missouri.

NEW SURPLUS refrigeration parts, air conditioning parts, manufacturers' overstock and close-out specials. Relays, overloads, capacitors, fittings, valves, cold controls, compressors, etc. Send for free 12 page new fall circular. Every item a bargain. COLDPARTS SUPPLY, INC., 1600 S. Dearborn St., Chicago 16, Illinois. CAlumet 5-7102.

MAKE EXTRA Winter profits: Display and sell a top line of room air conditioner Winter covers. Indoor and outdoor types available for immediate delivery from stock. Send for free alphabetical directory and price sheet. The price is low—and markup high—act now. JIFFY COVERS CORP., 614 Third Avenue, New York 16, New York.

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ATTENTION REFRIGERATION Servicemen. Send for catalog listing values in refrigeration and air conditioning parts, relays, capacitors, compressors. Savings up to 50%. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

BUSINESS OPPORTUNITIES

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FOR SALE: Refrigeration sales and service firm in central Iowa town of 7000. Service 40 miles from town. All the work one can handle, lots of room for expansion. Established 16 years. Must be able to service large commercial accounts and refrigeration in general. Will help buyer get started. Clean inventory, reasonable. BOX A6860, Air Conditioning, Heating & Refrigeration News.

FOR SALE: Commercial and industrial refrigeration service. Shop located in heavy industrial area. Gross business average $3,000 per month. Yearround. Great potential for expansion. Asking $8,000 cash, stock, 2 trucks included. Inventory and equipment will run more than half this figure. BOX A6863, Air Conditioning, Heating & Refrigeration News.

MISCELLANEOUS

DESIRE DISTRIBUTION and representation for Chile in the field of air conditioning, heating and refrigeration. Chilean firm with engineering and commercial experience as well as equipment servicing. ANDRES PARIS E. HIJO LTDA. ENGINEERS. Casilla 13009., Santiago 11, Chile.

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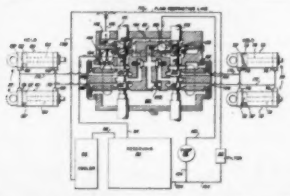
IF YOU are losing sales because your current line of commercial refrigerators does not include certain models, answer this advertisement and we'll tell you about a private label program that could mean extra sales for you. We are a responsible manufacturer with years of experience in designing, testing, and producing. Let us know what you'd like to have. BOX A6853, Air Conditioning, Heating & Refrigeration News.

source of higher pressure gas and an outlet connected to a delivery line for lower pressure gas, a diaphragm closing said body to form a chamber, a movable jaw in said chamber actuated

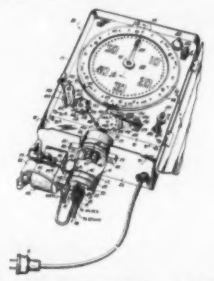
by said diaphragm, spring means to bias said jaw to open postion, a stationary jaw mounted in said body to cooperate with said movable jaw, a pinch tube extending from said inlet between said jaws to said outlet, said delivery line having a restriction therein. . . .

2,986,166. PRESSURE FLUID CONTROL SYSTEM. Kenneth H. Hoen, Salt Lake City, Utah, assignor to The Eimco Corp., Salt Lake City, Utah.



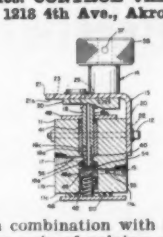
1. A pressure fluid control system for plural motion devices operable simultaneously or selectively comprising a valve body; said valve body having an inlet port for pressure fluid; a chamber in said valve body having communication with the inlet port; an exhaust port in the valve body; a plurality of pairs of pressure fluid outlet or return ports in said valve body. . . .

2,986,167. MULTIPLE CONTROL FOR DISTRIBUTION SYSTEM. David E. Griswold, Newport Beach, Paul W. Carsten, Malibu, and John D. Settles, Garden Grove, Calif., assignor to Donald G. Griswold.



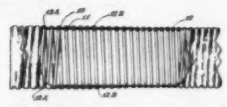
1. A control system including a series of water distribution pipes; a normally closed pressure-responsive distribution valve connected in each pipe; a movable pilot valve, means to connect said pilot valve to said distribution valves for controlling successive opening and closing of said distribution valves; means for actuating said pilot valve through successive positions of operation to successively condition said distribution valves to open and close to effect flow successively through said pipes; and time-controlled means connected in series with said pilot valve and said distribution valves for selectively causing a distribution valve when conditioned to open in a given position of said pilot valve, to remain closed without change in said given position of said pilot valve.

2,986,168. CONTROL VALVE. Andrew Sikula, 1218 4th Ave., Akron, Ohio.



1. In combination with a valve body having a pair of valving elements that are shiftable relatively of said valve body to control fluid flow through a pair of fluid lines that lead into and out of said valve body; cam means associated with said body and being selectively engageable with said valveing elements; said cam means being shiftable relatively of said body in at least two different substantially straight line paths of movement whereby said valves may be operated independently of each other upon shifting of said cam means in one direction while being operated in unison upon shifting of said cam means in said remaining direction.

2,986,169. FLEXIBLE HOSE. Clarence E. McCormick, Poland, Ohio, assignor to Lee Rubber & Tire Corp., Youngstown, Ohio.



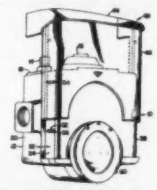
1. A flexible hose corrugated from end to end, said hose comprising a continuous reinforcing helically-formed wire extending from end to end of said hose with a one-piece flexible covering exteriorly thereover and in intimate contact therewith and having exteriorly thereof a helical groove extending from end to end of said covering with the convolutions of said wire and groove alternating, the covering comprising a main body portion of substantially uniform predetermined thickness, a terminal portion spaced a substantial distance from one end of said main body portion, an intermediate portion of appreciable length between said two portions, the wall thickness of the terminal portion being appreciably greater than the thickness of the main body portion, and said intermediate portion tapering in thickness from that of said terminal portion to that of said body portion.

2,986,195. TUBE BENDING MACHINES. Alfred R. Landis, St. Johns Station, Mo., assignor, by mesne assignments, to Imperial-Eastman Corp., Chicago, Ill.

1. In a tube bending machine in which the tube to be bent is clamped between a rotatable radius form block and a cooperating form shoe arranged for rectilinear movement in a direction substantially tangential with respect to the radius block, said form block and form shoe each having opposed faces with a forming groove for embracing respectively the diametrically opposite sides of a tube being bent, said radius form block being mounted to permit axial displacement thereof with respect to said form shoe, the improvement comprising. . . .

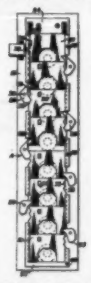
Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

2,986,299. DETACHABLE COVERS FOR TEMPERATURE AND LIKE CONTROL DEVICES. Michael J. Caparone, Arcadia, and Theodore J. Dykzeul, Rolling Hills, Calif., assignors to Robertshaw-Fulton Controls Co., Richmond, Va.



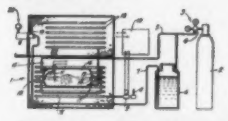
1. A detachable cover for control devices having opposite recessed side wall portions defining a pair of longitudinal walls and each being provided with at least one projection spaced from said walls respectively, said cover comprising a hollow shell of thin flexible material having a front and a pair of side wall portions connected to a lid portion, said pair of side wall portions each having a longitudinal rib adjacent the marginal edge thereof opposite said front wall portion and facing inwardly toward each other. . . .

2,986,304. BOTTLED DRINK VENDING MACHINE. Carlton L. Barnhart, 2938 W. Lancaster, Fort Worth, Texas.



1. In a bottled beverage vending machine, a vertical well having a vertical row of bottle dispensing openings therein, a plurality of gates positioned one upon another in a vertical row, means slidably mounting said gates to at least partially cover said bottle dispensing openings, each said gate having a notched opening in the center of the lower edge thereof of a size adapted to receive the forward end of the neck of a bottle to be dispensed, latch means locking the gates below a bottle as the latter is being dispensed, means limiting the upward movement of said gates above the bottle being dispensed and whereby the upper edges of the last said gates effectively block corresponding said openings.

2,986,306. BEVERAGE DISPENSING SYSTEM. John B. Cocanour, Reno, Nev. (Fallon, Nev.)



4. A beverage dispensing system comprising, a faucet having a mixing valve therein, means for feeding carbonated water to said mixing valve under pressure, means for feeding syrup to said valve under pressure, and a common regulator controlling the pressures in the carbonated water and syrup feed means so as to feed the carbonated water and syrup to said mixing valve comprising a housing having an outlet and a feed passage connected to said means for feeding carbonated water, with a valve seat arranged in the feed passage and leading to the outlet, a washer adapted for seating on the seat and having a diameter smaller than that of the passage. . . .

(To Be Continued)

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Box A6858, Air Conditioning, Heating & Refrigeration News

MANAGEMENT GUIDE
for
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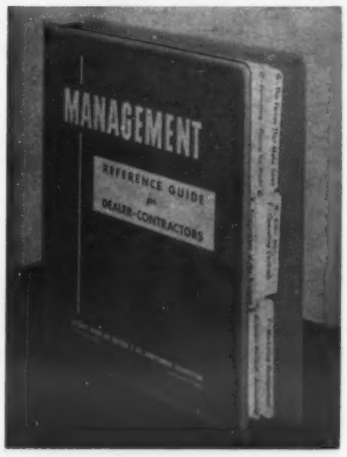

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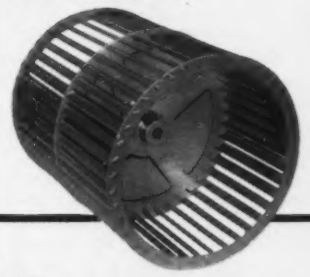

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Frigidaire, Norge, Kelvinator Report Rises In Sales

DETROIT—The general improvement in sales of consumer durable goods seemed to be picking up momentum. Frigidaire Div., General Motors Corp., announced the immediate recall of 350 employes last week, boosting total employment over the 15,000 mark, several hundred above the figure a year ago. Herman Lehman, GM vice president and Frigidaire general manager, attributed the higher employment figure to "a gratifying improvement in the appliance business through the summer months."

Appliance sales of Kelvinator Div., American Motors Corp., in August represented the highest monthly sales total in the past four and a half years, being higher than any month since February, 1957, reported H. L. Travis, vice president in charge of sales. August marked the fifth consecutive month in which Kelvinator sales chalked up a significant increase over the year-ago period.

Norge Div., Borg-Warner Corp., sales in August were up 23% over the same month in 1960, with the volume being the highest monthly total since November, 1959.

Hot Weather--

(Continued from Page 1, Col. 1)

end of the second week in September.

It was also reported that room cooler shipments by distributors in the areas affected by the heat were running into the hundreds of units per distributor, an unheard-of-figure at this time of year. One New Jersey outlet said it had moved more units since the first of September than in all of the year 1961 prior to Aug. 31.

While there was not as much "impulse buying" of larger unitary equipment and applied systems as there had been of room units during the hot spell, contractors were reporting substantial gains in sales activity over similar periods in previous years. Some contractors said that they were figuring on two to three times as many jobs currently as they were at the same time last year.

General Chemical Names 3 to Key Research Posts

NEW YORK CITY — Three key research appointments for Allied Chemical's General Chemical Div. have been announced by John C. Fedoruk, technical director.

William C. Ruch has been named director of development research; Dr. Robert W. Mason, director of laboratory research; and Charles D. Boyer, Jr., director of planning research. Their headquarters is at the General Chemical Research Laboratory in Morris Township, N. J.

All were formerly assistant directors of their respective departments.

NLRB Reaffirms Jurisdiction over Building

WASHINGTON, D. C. — The National Labor Relations Board recently reaffirmed its position that the building and construction industry is an industry affecting interstate commerce and therefore subject to its jurisdiction.

The board made this clear in reversing the recommendation of a trial examiner for dismissal of a secondary boycott case involving the Boulder (Colo.) Master Plumbers Assn. and Local 575 of the United Assn.

The trial examiner could find no evidence that contractors and subcontractors working on picketed construction sites were engaged in commerce or an industry affecting commerce.

NLRB ruled that that didn't matter. The industry was in interstate commerce by administrative ruling.

That being so, pickets of Local 575, whose signs at the job sites did not make it clear just whom they were picketing, were guilty of inducing and encouraging employes of contractors and subcontractors not involved in the dispute between the union and the Master Plumbers Assn. to cease performing services.

NLRB ruled that their picketing also coerced and restrained the contractors and subcontractors to cease doing business with members of the association.

The board ordered the union to cease these activities.

Pickets Force General To Subcontract

WASHINGTON, D. C. — A National Labor Relations Board trial examiner has ruled a United Assn. local in New Orleans violated no law when it picketed to force a general contractor to hire a subcontractor to do his plumbing work.

The union was in the clear, the trial examiner reasoned, because it did not care whether the general contractor hired a union or non-union plumbing contractor, it established no secondary boycott, and it was not restraining the general contractor.

In this case, Local 60's contract with the Associated General Contractors called for AGC members to subcontract plumbing work. The union set up its pickets to enforce this provision, even though the general contractor had hired two Local 60 members to do the work in question.

Auto Conditioner Firm Names Dan Guarini

BOSTON — Automatic Radio, manufacturer of automobile air conditioners, radios, and antennas, has named Dan Guarini as advertising and publicity manager.

He will be in charge of advertising and publicity for both Automatic Radio and its Vornado Automobile Air Conditioner Div.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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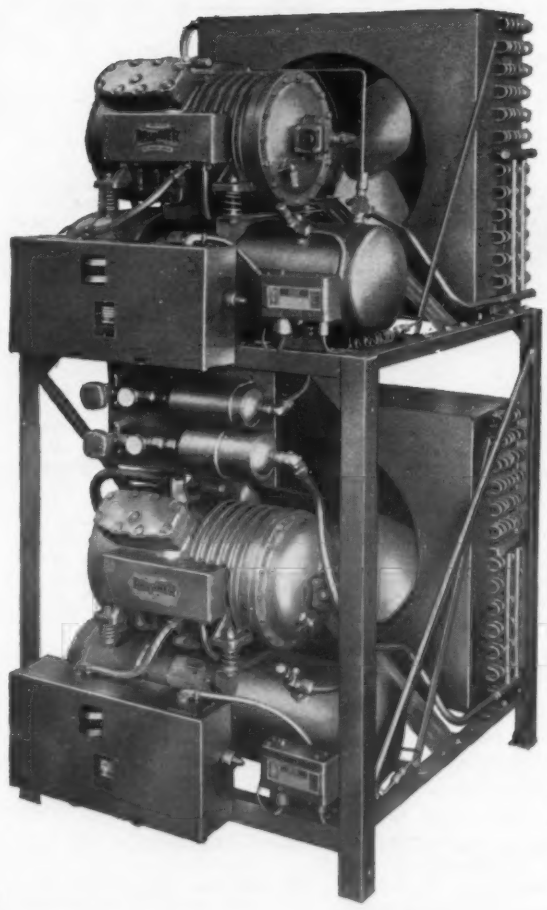

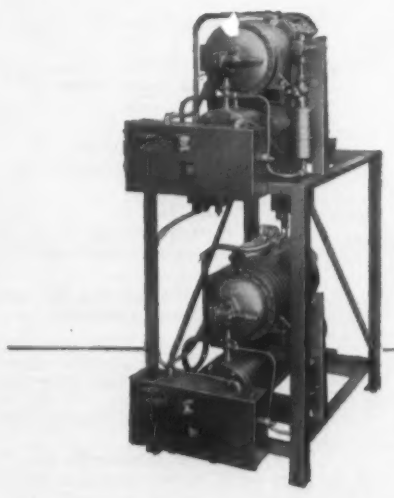

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